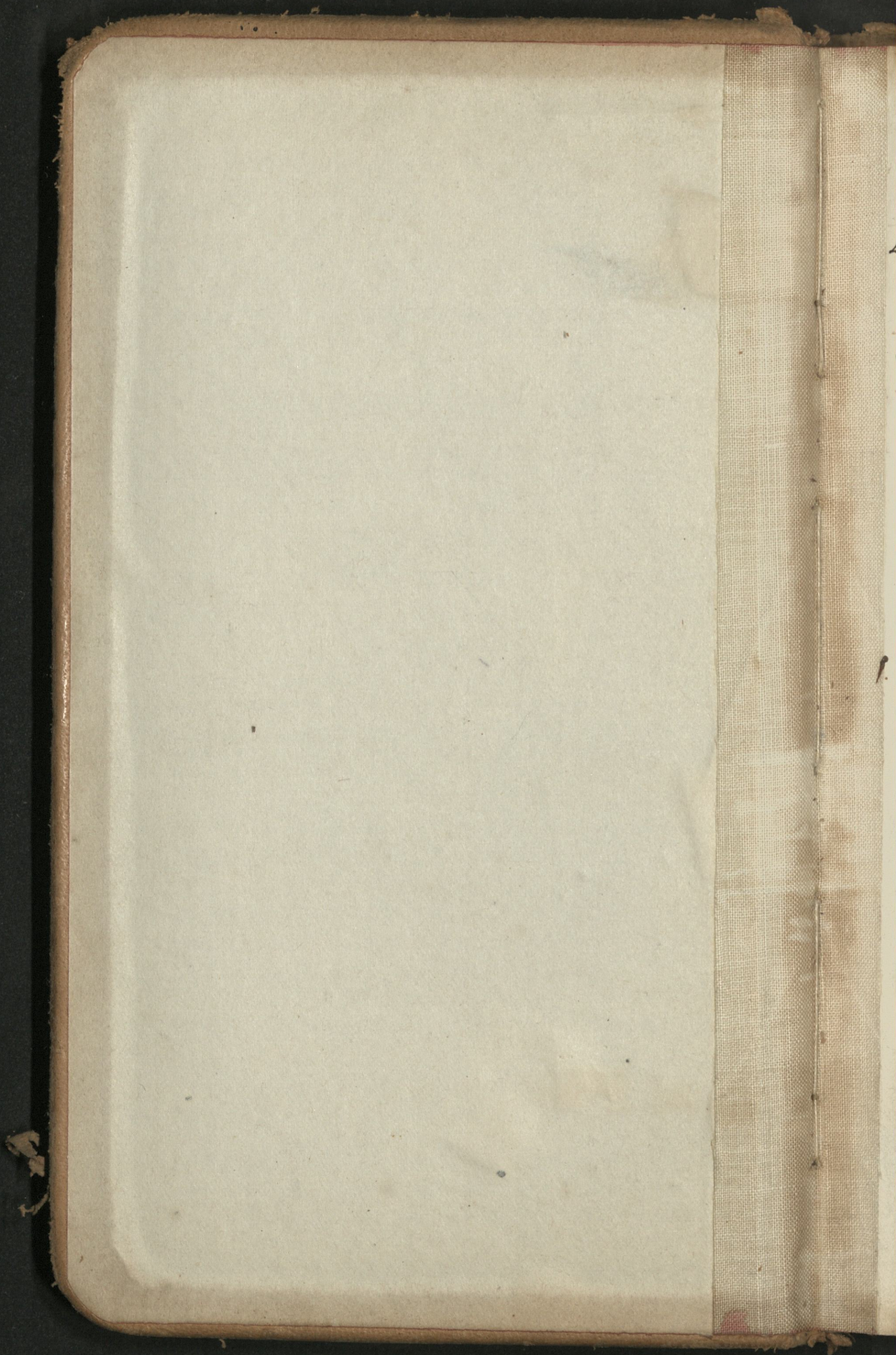


60 B 8

LEVEL BOOK.

410

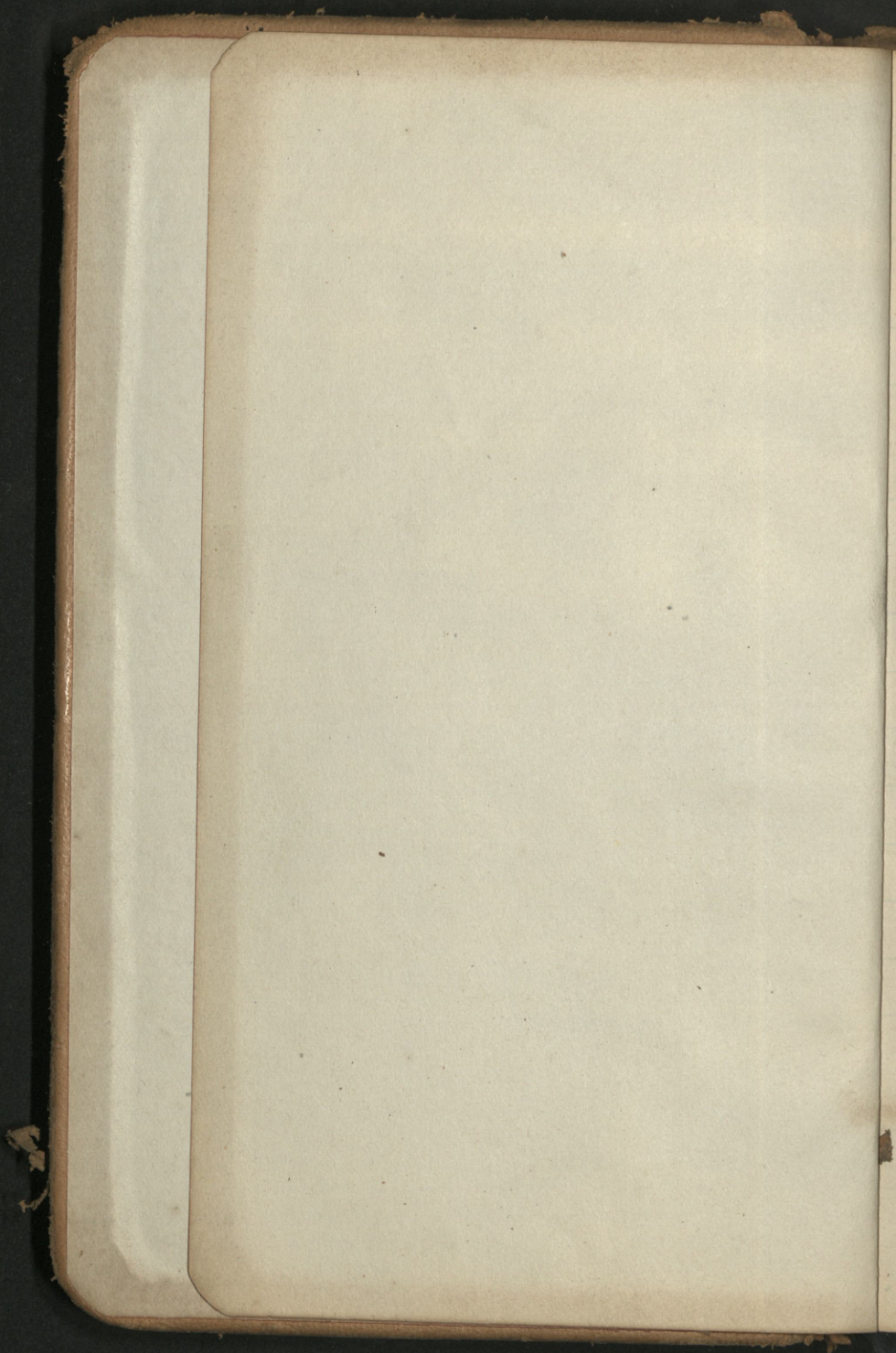


BRADSHAW MOUNTAIN R. R.

CROWLEY KING BRANCH

Construction Notes

Book No. 6



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Section 9

Sta	Grade.	L	C	R
Back up		-11.4		0.0
412+87.7	4576.02	24.1	-18	8.0

413+20		-9.0 20.5	-4.3	-1.7 9.5
--------	--	--------------	------	-------------

+35		-1.8 9.7	0.0	0.0 8.0
-----	--	-------------	-----	------------

+40		0.0 8.0	10.4	11.2 8.3
-----	--	------------	------	-------------

Boulders $5.0 \times 5.0 \times 7.0$
 $3.0 \times 3.0 \times 3.0 = 9.3$
 $3.0 \times 4.0 \times 4.0$

+60		14.3 9.1	+6.8	16.0 9.5
-----	--	-------------	------	-------------

+80		16.0 9.5	+7.8	14.7 10.4
-----	--	-------------	------	--------------

Boulders $3.0 \times 4.0 \times 6.0$
 $2.0 \times 5.0 \times 5.0 = 4.5$

414		14.7 9.2	+7.0	18.6 10.2
-----	--	-------------	------	--------------

+30		0.0 8.0	+1.1	12.3 8.6
-----	--	------------	------	-------------

+35		-2.6 10.9	-1.0	0.0 8.0
-----	--	--------------	------	------------

+36 04571.42

414+55		-6.4 16.6	-3.3	-1.4 9.1
--------	--	--------------	------	-------------

Areas Cub. Yds.
Exc. Emb'd Exc. Emb'd

68.79

Sta 412+87.7 to 413+40

102.1 Emb 132.6 Cpf.

101.95

Made from cut

30.1

00

6.30

0.5

0.4

8.06

00

132.6

9.3

Sta 413+35 to 414+35 Exc. 430.5

41.7

S

1.4

104.44

S

1.71

40% Loose Rock = 128.9 Cpf.

140.41

S

24.3

4.5

Balance Solid Rock 249.6 "

121.10

S

9.2

Have 132.6 So free

" 119.4 N. "

18.33

00

1.1

Sta 414+30 to 415

00

18.55

374.2

56.3

SG

Emb 119.4 Cpf.

430.5

32.7 made from cut

69.71

85.6

119.4

Sta	Grade.	L	C	R
415	HB	$\begin{array}{r} -38 \\ 127 \end{array}$	-18	$\begin{array}{r} -04 \\ 76 \end{array}$
		45' Bridge		
415+45	HB	$\begin{array}{r} -22 \\ 103 \end{array}$	-08	$\begin{array}{r} 00 \\ 80 \end{array}$
		$\begin{array}{r} -50 \\ 145 \end{array}$	-10	$\begin{array}{r} 00 \\ 80 \end{array}$
		$\begin{array}{r} -52 \\ 148 \end{array}$	-29	$\begin{array}{r} -09 \\ 84 \end{array}$
415+80		$\begin{array}{r} -26 \\ 109 \end{array}$	00	$\begin{array}{r} 00 \\ 80 \end{array}$
416+05		$\begin{array}{r} 00 \\ 80 \end{array}$	+05	$\begin{array}{r} +19 \\ 85 \end{array}$
		$\begin{array}{r} +36 \\ 89 \end{array}$	+49	$\begin{array}{r} +57 \\ 94 \end{array}$
		$\begin{array}{r} +30 \\ 88 \end{array}$	+45	$\begin{array}{r} +54 \\ 94 \end{array}$
417+05		$\begin{array}{r} 00 \\ 80 \end{array}$	+15	$\begin{array}{r} +30 \\ 88 \end{array}$
417+50		$\begin{array}{r} -21 \\ 102 \end{array}$	-03	$\begin{array}{r} 00 \\ 20 \\ 83 \end{array}$

-278

Areas		Cub. yds.	
Exc.	Emb'd	Exc.	Emb'd

32.97

15.02

1.38

28.75

Sta 415+45 to 416+05

12.4 Emb 40.9 Cy.

54.99

Made from Cut

11.9

00

9.10

3.6

2.8

11.73

00

40.9

5

2.6

43.4 Sta 415+80 to 418+50 Exc.

82.04

5

5.9

275.0 Cy. Loose Rock

58.0

Haul 40.9 So. free

74.55

5

5.1

" 110. North along fill

200' =

220 Haul

101.0

with 104.1

24.60

00

23.5

5.1

36.0

9.18

8.5

15.3

251.6

204

Sta	Grade.	L	C	R
418		$\begin{array}{r} -21 \\ 102 \end{array}$	00	$\begin{array}{r} +14 \\ 84 \end{array}$

+50		$\begin{array}{r} -3.3 \\ 12.0 \end{array}$	-13	$\begin{array}{r} 0.0 \\ 80 \end{array}$
-----	--	---	-----	--

418+635 04559.54

419		$\begin{array}{r} -6.5 \\ 16.8 \end{array}$	-29	$\begin{array}{r} -12 \\ 88 \end{array}$
-----	--	---	-----	--

+50		$\begin{array}{r} -9.9 \\ 21.9 \end{array}$	-65	$\begin{array}{r} -39 \\ 12.9 \end{array}$
-----	--	---	-----	--

420	-210	$\begin{array}{r} -11.9 \\ 24.9 \end{array}$	-87	$\begin{array}{r} -6.4 \\ 16.6 \end{array}$
-----	------	--	-----	---

+50		$\begin{array}{r} -12.5 \\ 25.8 \end{array}$	-85	$\begin{array}{r} -6.0 \\ 16.0 \end{array}$
-----	--	--	-----	---

+55 04553.60

421		$\begin{array}{r} -10.5 \\ 22.8 \end{array}$	-73	$\begin{array}{r} -5.1 \\ 14.7 \end{array}$
-----	--	--	-----	---

+50		$\begin{array}{r} -7.6 \\ 18.4 \end{array}$	-61	$\begin{array}{r} -4.7 \\ 14.1 \end{array}$
-----	--	---	-----	---

422	-278	$\begin{array}{r} -6.9 \\ 17.4 \end{array}$	-54	$\begin{array}{r} -3.9 \\ 12.9 \end{array}$
-----	------	---	-----	---

422+50		$\begin{array}{r} -5.6 \\ 15.4 \end{array}$	-42	$\begin{array}{r} -3.0 \\ 11.5 \end{array}$
--------	--	---	-----	---

Areas.		Cub. yds.	
Exc.	Embk.	Exc.	Embk.
560	735	2516	204
		34	295

00 2455 2550
 side Ditch R. 20.0

2750

82.1 Sta 417+05 to 424+65

Embk. 3132.5 cu. y.

6407

208.8 Borrow

$\frac{1}{2}$ Earth 1566.3 cu. y.

16140

$\frac{1}{2}$ Loose R 1566.2 cu. y.

375.9 Haul 720 yds

110' = 792 Haul

24458

4509

24240

4017

19147

3089

14217

2424

11961

1909

8659

100.3
 24118

Sta	Grade.	L	C	R
422+95		$\frac{-37}{126}$	-16	$\frac{-11}{87}$

423+25		$\frac{-95}{213}$	$\frac{-96}{30}$	$\frac{-56}{154}$
--------	--	-------------------	------------------	-------------------

+25

Box Culvert 2' x 2 1/2' x 36' = 1190 BM

+50	04545.40	$\frac{-58}{157}$	-23	$\frac{-14}{91}$
-----	----------	-------------------	-----	------------------

+85

$\frac{-104}{226}$	-86	$\frac{-43}{60}$	$\frac{-28}{112}$
--------------------	-----	------------------	-------------------

424

$\frac{-132}{270}$	-79	$\frac{-32}{118}$
--------------------	-----	-------------------

+50

$\frac{-15}{93}$	00	$\frac{00}{80}$
------------------	----	-----------------

-310

+65

$\frac{00}{80}$	+11	$\frac{+19}{85}$
-----------------	-----	------------------

+70

$\frac{+09}{82}$	+16	$\frac{+18}{85}$
------------------	-----	------------------

+80

$\frac{00}{80}$	00	$\frac{+05}{81}$
-----------------	----	------------------

425

$\frac{-15}{93}$	-07	$\frac{00}{40}$	$\frac{+06}{82}$
------------------	-----	-----------------	------------------

+37.3 04539.60

Areas Cub. Yds.
Exc. Emb't Exc. Emb't

3384 24118
1343

208.00 121.2

5372 1546

18486 109.8

21066 199.9 was

00 525
31 09

1668 00 3132.5 ✓

38

2416 4.8

200 00 Sta 424+80 to 425+50

1.2 2.4 Emb. 8.5 cu. ✓

120 990 493 6.1 Made from cut.
62.2 8.5 ✓

1998

Sta	Grade.	L	C	R
425+50		$\frac{00}{8.0}$	+3.2	$\frac{+6.0}{9.5}$

Boulder $3.0 \times 4.0 \times 5.0 = 2.2$

+75		$\frac{+3.0}{8.8}$	+6.8	$\frac{+9.0}{10.3}$
-----	--	--------------------	------	---------------------

425+90		$\frac{00}{8.0}$	+2.2	$\frac{+8.8}{10.2}$
--------	--	------------------	------	---------------------

426+05		$\frac{-4.6}{13.9}$	-2.1	$\frac{00}{8.0}$
--------	--	---------------------	------	------------------

+50	2.94	$\frac{-17.6}{33.4}$	-12.5	$\frac{-9.3}{21.0}$
-----	------	----------------------	-------	---------------------

+50 Rock Drain

+90		$\frac{-6.5}{16.8}$	-2.4	$\frac{00}{8.0}$
-----	--	---------------------	------	------------------

427		$\frac{-3.4}{12.1}$	$\frac{00}{2.0}$	+1.6	$\frac{+2.8}{8.7}$
-----	--	---------------------	------------------	------	--------------------

+3.5		$\frac{13.8}{27.7}$	$\frac{-6.0}{9.0}$	$\frac{-1.6}{8.0}$	$\frac{00}{6.0}$	+2.3	$\frac{+4.2}{9.1}$
------	--	---------------------	--------------------	--------------------	------------------	------	--------------------

Boulders $\frac{4.0 \times 4.0 \times 4.0}{3.5 \times 4.0 \times 6.0} = 5.5$

+50		$\frac{00}{8.0}$	-4.0	$\frac{-12.3}{25.5}$
-----	--	------------------	------	----------------------

Boulder $4.0 \times 5.0 \times 8.0 = 5.9$

427+70		$\frac{00}{8.0}$	+3.3	$\frac{+6.0}{9.5}$
--------	--	------------------	------	--------------------

Areas		Cub. Yds.	
Exc.	Embk	Exc.	Embk
52.00	00	62.2	Start 2450 to 426+05 Exc. 288.2
		22	Class
		76.4	Slips Lo Rock 20.904
	S	7.4	
112.94			Balance Solid " 267.3 "
	S	10.2	
		46.7	Haul 1526 N on side from
			" 60. from 425+15 to 26+35 = 72
55.22	00		
	S	3.3	
		10.2	7.1
00	39.10	2186	
		696	54
		288.2	
			394.4 Start 25+90 to 427+70
	434.15		Emb 880.7 cy.
			360.5 made from Cub
00	52.57		
	S	0.3	
		1.8	11.3
14.41	8.50		
	S	10.5	
		31.5	36.4
34.17	47.70		
	S	4.6	
		5.5	
		6.3	43.8
00	110.05		
		5.9	
		13.1	27.2
	S	7.8	
52.88	00		880.7
	S	10.8	
		3.4	
		101.5	

4200

944

Sta	Grade.	L	C	R
427+75		$\frac{+12}{8.3}$	+38	$\frac{+6.3}{9.6}$
428+35		$\frac{+42}{9.1}$	+73	$\frac{+11.8}{11.0}$
+36.5	04530.80			
+55		$\frac{+3.8}{9.0}$	+72	$\frac{+13.0}{11.3}$
+75		$\frac{+5.8}{9.5}$	+89	$\frac{+11.4}{10.9}$
428+90		$\frac{+6.9}{9.7}$	+78	$\frac{+11.7}{10.9}$
	-310	Boulders	$\frac{3.0 \times 3.0 \times 4.0}{4.0 \times 8.0 \times 9.0} = 12.0$	
429+15		$\frac{+7.3}{9.8}$	+12.1	$\frac{+16.9}{12.2}$
		Boulder	$3.0 \times 3.0 \times 3.0$	
+45		$\frac{+7.2}{9.8}$	+11.4	$\frac{+15.4}{11.9}$
		Boulder	$3.0 \times 3.0 \times 5.0$	
429+80		$\frac{+6.3}{9.6}$	+7.7	$\frac{+13.4}{11.1}$
430+10		$\frac{+3.2}{8.8}$	+8.0	$\frac{+9.9}{10.5}$
+29	04524.83	Boulders	$\frac{5.0 \times 5.0 \times 5.0}{6.0 \times 7.0 \times 9.0} = 18.6$	
+50		$\frac{0.0}{8.0}$	+16	$\frac{+1.3}{8.3}$

Areas		Cub. Yds.	
Exc.	Emb'd	Exc.	Emb'd
6401		101.5	
	S	60.9	
		223.8	
137.37		Sta 426 + 90 + 430 + 56 Eps 195.9	
	S	27.7	Class
		102.8	Slip Loose Rock 164.904
140.28		Balance Solid " 1787.0 "	
	S	24.2	
		111.1	Haul 126. So for
159.58		"	140.1 N "
	S	13.5	" 260. from 428 + 105 + 426 + 60 = 390
		87.3	" 1230. 429 + 30 + 431 + 80 = 3075
			Total Haul 3465
154.74	S	12.0	
		12.0	
		178.1	
229.90		1.0	
		246.7	
214.09		1.7	
		238.9	
154.50			
		157.7	
129.60		186	
		109.5	
18.24	00	13	
		162.88	

1000

Sta	Grade.	L	C	R
430+56		$\frac{-1.0}{8.5}$	00	$\frac{0.0}{8.0}$
		Boulders $\frac{4.0 \times 4.0 \times 5.0}{4.0 \times 11.0 \times 14.0} = 2.58$		
+80		$\frac{-5.3}{15.0}$	-34	$\frac{-1.5}{9.3}$
	-2.84			
430+90		$\frac{-6.1}{16.2}$	-16	$\frac{-4.5}{13.8}$
431+15		$\frac{-7.5}{18.3}$	-70	$\frac{-8.2}{19.3}$
+25	04522.10			
+50		$\frac{-10.5}{22.6}$	-80	$\frac{-7.0}{17.5}$
+75		$\frac{-12.0}{25.0}$	-132	$\frac{-10.1}{22.1}$
+95		$\frac{-15.8}{30.7}$	-84	$\frac{-5.4}{15.1}$
	-26.2			
432		$\frac{-12.8}{26.2}$	-84	$\frac{-5.4}{15.1}$
+30		$\frac{-2.4}{10.6}$	-17	$\frac{-1.4}{9.1}$
432+50		$\frac{-4.0}{13.0}$	-37	$\frac{-2.4}{10.6}$

Areas		Cub. yds	
Exc.	Emb'd	Exc.	Emb'd

00	350	16288	0.3
----	-----	-------	-----

		258	30.5
--	--	-----	------

		1756.1	
65.11		195.856	

		1951.9	234
--	--	--------	-----

61.10			
-------	--	--	--

Sta 430+50 to 433+92

114.6 Emb. 2306.5 cu.

186.55			
--------	--	--	--

2084.8 made from

264.3 Cut, Channel on R.

221.30			
--------	--	--	--

433 and swell on

282.2 borrowed matl.

388.21			
--------	--	--	--

Balance from

242.5 measured Pit on L

266.56			
--------	--	--	--

429+50, Class

46.6 Loose Rock 221.7

237.16			
--------	--	--	--

221.7 yds hauled

148.4 355 ft = 789.4

30.05			
-------	--	--	--

35.6

66.06			
-------	--	--	--

99.3

1287.7

Sta	Grade.	L	C	R
432+75		$\frac{-94}{211}$	-60	$\frac{-39}{129}$

433		$\frac{-91}{206}$	-60	$\frac{-46}{139}$
-----	--	-------------------	-----	-------------------

+50		$\frac{-118}{247}$	-0.4	$\frac{-109}{234}$
-----	--	--------------------	------	--------------------

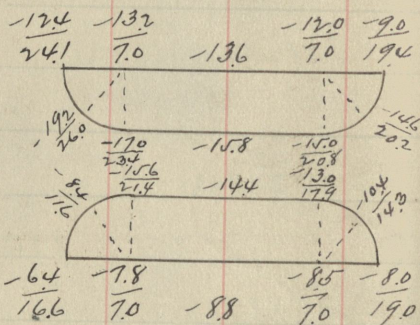
433+70 H/B

+92 Toe

+05 Toe

434+25 H/B

-262



+50		$\frac{-34}{100}$	-5.3	$\frac{-52}{148}$
-----	--	-------------------	------	-------------------

+85		$\frac{-14}{91}$	-0.4	$\frac{00}{8.0}$
-----	--	------------------	------	------------------

435		$\frac{00}{8.0}$	+0.3	$\frac{+0.5}{8.2}$
-----	--	------------------	------	--------------------

435+25		$\frac{+0.9}{8.5}$	+2.3	$\frac{+3.3}{8.8}$
--------	--	--------------------	------	--------------------

Areas		Cub. yds.	
Exc.	Emb.	Exc.	Emb.

148.55

1287.7

138.9

151.45

445.4

329.57

259.4

370.66

175.1

2306.5

74.7 Sta 434 + 0.5 to 435

207.04

Emb. 290.1 Cy.

142.8 Made from Cut.

101.39

71.1

00

83.2

0.8

1.5

4.43

00

290.1

5

1.6

V

20.9

40.70

5

47.4

5.2

75.9

WAD

V 290

Sta	Grade.	L	C	R
435+55		$\frac{+23}{8.6}$	+26	$\frac{+32}{8.8}$
436+05		$\frac{+11.9}{10.9}$	+13.4	$\frac{+14.4}{11.7}$
+333	04508.78			
+35		$\frac{+10.7}{10.7}$	+11.7	$\frac{+12.4}{13.1}$
+80	482-	$\frac{+7.5}{9.9}$	+8.1	$\frac{+9.3}{10.4}$
		Boulder 3.0x4.0x5.0 = 22		
437		$\frac{+9.5}{10.4}$	+10.2	$\frac{+12.0}{11.0}$
293	04506.05			
+30		$\frac{+4.8}{9.2}$	+6.5	$\frac{+6.8}{9.7}$
		Boulders $\frac{2.5 \times 6.0 \times 12.0}{2.0 \times 3.0 \times 7.0} = 8.2$		
+50		$\frac{+7.6}{9.9}$	+7.7	$\frac{+4.7}{9.2}$
		Boulder 3.0x4.0x8.0 = 3.6		
+7.2	-31.0	$\frac{+6.7}{8.2}$	+2.8	$\frac{+5.6}{9.4}$
+85		$\frac{+12.4}{11.1}$	$\frac{+11.2}{6.0}$ +7.9	$\frac{+3.4}{8.8}$
438		$\frac{+3.0}{8.8}$ $\frac{+4.1}{2.0}$	+7.3	$\frac{+10.5}{2.0}$ $\frac{+7.8}{9.9}$

Areas.		Cub. Yds.	
Exc.	Emb'd	Exc.	Emb'd
		75.9	
44.62	S	93.4	
		278.9	
256.62	S	92.6	
		271.2	Sta 434+85 to 438+35
			Exc. 2167.6 C.Y.
231.63	S	75.5	Class
		317.5	Slips Loose Rock 404.1 C.Y.
			Balance Solid. 1763.5
149.42	S	22.1	Haul 62. So far
		2.2	
		127.6	" 261. N "
195.14	S	31.8	" 190 from 435+65 to 434+35 = 247
		168.3	" 1120 " 436+75 to 439+20 = 2744
			" 206 " 436+10 to 445+60 = 1957
107.83	S	20.9	waste 131.4
		8.2	
		85.4	Total Haul 4948
122.74	S	24.9	
		3.6	
		70.3	
49.84	S	16.2	
		47.3	
146.62	S	17.1	
		73.2	
117.02	S	33.1	
		2.8	
		1960.0	

man

✓

Sta	Grade.	L	C	R
438+10		$\frac{+0.9}{8.2}$	$\frac{+5.5}{5.0}$	$\frac{+1.7}{8.4}$
+15		$\frac{0.0}{8.0}$	+1.7	$\frac{0.0}{8.0}$
+35		$\frac{-10.8}{23.2}$	-10.3	$\frac{-7.5}{18.3}$
4 +55		$\frac{-14.9}{29.4}$	$\frac{-16.4}{21.0}$	$\frac{-6.3}{16.4}$
+65		$\frac{-16.8}{32.4}$	-11.8	$\frac{-9.8}{21.7}$
4 438+90	-310	$\frac{-14.3}{28.5}$	-4.9	$\frac{-7.1}{17.6}$
439+05		$\frac{-9.5}{21.5}$	$\frac{-7.9}{13.0}$	$\frac{-1.7}{9.5}$
+25		$\frac{-10.0}{22.0}$	-7.2	$\frac{-3.7}{12.5}$
+50		$\frac{-9.5}{21.3}$	-5.7	$\frac{-2.6}{11.0}$
4 439+85		$\frac{-7.1}{17.6}$	-3.5	$\frac{0.0}{8.0}$

Areas.		Cub. Yds.	
Exc.	Emb'd	Exc.	Emb'd
61.52		1960.0	
		7.0	
1360	0.0		
		3.4	68.6
		1970.4	
00	277.78	197.2	
		2167.6	✓
		202.6	
	269.18		
		126.3	
	412.64		
		352.7	
	349.20		
		123.5	
	90.34		
		99.1	
	172.15		
		143.4	
	1376.4		
		134.3	
00	69.65	0.3	34.7
		0.3	1285.2

Sta	Grade.	L	C	R
440		$-\frac{89}{203}$	$-19 \frac{30}{5.0}$	$\frac{+1.1}{8.3}$

+10		$-\frac{75}{182}$	-24	$\frac{00}{8.0}$
-----	--	-------------------	-------	------------------

+35		$-\frac{94}{211}$	-52	$-\frac{26}{10.9}$
-----	--	-------------------	-------	--------------------

+60		$-\frac{67}{170}$	-50	$-\frac{27}{11.0}$
-----	--	-------------------	-------	--------------------

+80		$-\frac{12}{8.8}$	00	$\frac{00}{8.0}$
-----	--	-------------------	----	------------------

440 + 90	-310	$-\frac{10}{8.6}$	$\frac{00}{4.0} + 04$	$\frac{+2.2}{8.6}$
----------	------	-------------------	-----------------------	--------------------

441 + 10		$-\frac{28}{112}$	-14	$\frac{00}{8.0}$
----------	--	-------------------	-------	------------------

+25		$-\frac{74}{18.1}$	-37	$-\frac{25}{10.7}$
-----	--	--------------------	-------	--------------------

+30 Box Culvert $2 \times 2\frac{1}{2} \times 29$

+50		$-\frac{16}{9.4}$	-16	$\frac{00}{8.0}$
-----	--	-------------------	-------	------------------

441 + 55		$\frac{00}{8.0}$	$+03$	$\frac{+1.0}{8.3}$
----------	--	------------------	-------	--------------------

Areas		Cub. Yds.		
Exc.	Embk	Exc.	Embk	
165	55.18	0.3	1285.2	Sta 439+85 to 440+10
		0.2	209	Exc. 0.5 Cy. S.R.
		0.5		
00	5769			
			84.7	
	125.20			Sta 438+15 to 441+55
			105.6	Embk 1628.1 Cy.
	102.90			1598.1 made from cur
			39.7	Balance borrow
00	420			Loose Rock 30.0 Cy.
		2.1	1.1	
1132	150			Sta 440+80 to 441+10
		2.8	9.1	Exc 13.0 Cy. S.R.
		4.9		
00	2324	8.1	59	Not appropriate for
		13.0		
			30.9	
	87.93			
			49.7	
00	19.52			
		0.2		
		0.4	1.2	
6.45	00	1.55	1628.1	
		4.2		
		20.3		

Sta	Grade.	L	C	R
441 +7		$\frac{+24}{8.6}$	+2.8	$\frac{+3.8}{9.0}$
442 +0.5		$\frac{+1.5}{8.4}$	+3.3	$\frac{+4.5}{9.1}$
+20		$\frac{+0.8}{8.2}$	+2.0	$\frac{+2.5}{8.6}$
+40		$\frac{00}{8.0}$	00	$\frac{+0.8}{8.2}$
+45		$\frac{-2.3}{10.5}$	-1.8	$\frac{00}{8.0}$
+50		$\frac{-2.0}{10.0}$	-1.2	$\frac{-0.7}{8.0}$
+70		$\frac{00}{8.0}$	00	$\frac{00}{8.0}$
+80		$\frac{+2.1}{8.0}$	+2.4	$\frac{+2.3}{8.6}$
443		$\frac{+2.1}{8.5}$	+3.4	$\frac{+4.0}{9.0}$
+30		$\frac{+4.0}{9.0}$	+5.4	$\frac{+7.0}{9.8}$

-310

Areas		Cub. Yds.	
Exc.	Emb'd	Exc.	Emb'd
49.44		20.3 Sta 441 + 50 to 442 + 45 Exs. 1868	
	5	8.3 Class	
		6.63 Slip Loose Rock 15.7 Cg.	
52.88		Balance Solid Rock 171.1 "	
	5	1.6	
		23.0 Haul 124 North fri	
30.00		" 121. from 441 + 90 to 442 + 20 = 400	
	5	1.24	
		12.3	
3.20	00		
		0.2	2.3
		133.4	
00	2470	534.56	
		1868	
		41 Sta 442 + 40 to 442 + 70	
20.25		Emb 13.9 made	
		7.5 from Cut	
		13.9	
00	00		
	5	0.6	
		7.0	
38.12			
	5	3.9	
		34.2	
54.15			
	5	8.9	
		82.7	
94.76			
	5	87.5	
		16.6	
		235.4	

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Sta.	Grade.	L	C	R
443+65		$\frac{+10}{8.3}$	+2.5	$\frac{+37}{8.8}$

+90		$\frac{00}{8.0}$	+0.3	$\frac{+19}{8.5}$
-----	--	------------------	------	-------------------

444	-310	$\frac{-11}{8.6}$	-0.2	$\frac{00}{8.0}$
-----	------	-------------------	------	------------------

+50		$\frac{-42}{13.3}$	-2.8	$\frac{-20}{10.0}$
-----	--	--------------------	------	--------------------

445		$\frac{-74}{18.1}$	-5.3	$\frac{-42}{13.3}$
-----	--	--------------------	------	--------------------

+33 04481.14

+35		$\frac{-100}{22.0}$	-7.3	$\frac{-60}{16.0}$
-----	--	---------------------	------	--------------------

+70	-250	$\frac{-93}{21.0}$	-6.6	$\frac{-76}{18.4}$
-----	------	--------------------	------	--------------------

446		$\frac{-120}{25.0}$	-8.0	$\frac{-47}{14.0}$
-----	--	---------------------	------	--------------------

+20		$\frac{-104}{22.6}$	-6.8	$\frac{-42}{13.3}$
-----	--	---------------------	------	--------------------

446+50		$\frac{-00}{17.2}$	-4.4	$\frac{-24}{10.6}$
--------	--	--------------------	------	--------------------

Exc.	Embk	Cub Yds.	Exc.	Embk
40.30		235.4 Sta 44+70 to 444	335.8	
		1.8 Class		
		23.3 Slips Loose Rock	25.8 Cy.	
100.8	00	Balance Solid "	310.0 "	
		1.2	0.7 Haul 61.7 North free	
		261.7	" 200 from 443+20 to	
00	551	74.1 56	55.4 444+90 = 340	
		335.8		
	5432			
		1649		
	12381			
		206.4 Sta 443+90 to 447+10		
194.70		Embk 1332.4 Cy.		
		2488 made from Cuts		
	189.17			
		220.7		
	214.45			
		143.5		
	173.16			
		148.1		
93.36		87.7		
		1279.7		

Sea	Grade.	L	C	R
		$\frac{-68}{172}$	-48	$\frac{-20}{100}$
446+75				

447		$\frac{-22}{103}$	-07	$\frac{00}{80}$
-----	--	-------------------	-----	-----------------

+10		$\frac{00}{80}$	+16	$\frac{+26}{87}$
-----	--	-----------------	-----	------------------

+25		$\frac{+50}{93}$	+68	$\frac{+73}{98}$
-----	--	------------------	-----	------------------

+40		$\frac{+82}{101}$	+145	$\frac{+134}{116}$
-----	--	-------------------	------	--------------------

+50		$\frac{+86}{102}$	+114	$\frac{+140}{115}$
-----	--	-------------------	------	--------------------

+65		$\frac{+75}{99}$	+98	$\frac{+142}{116}$
-----	--	------------------	-----	--------------------

448		$\frac{+58}{95}$	+82	$\frac{+102}{106}$
-----	--	------------------	-----	--------------------

448+25 Back		$\frac{+42}{80}$	+44	$\frac{+87}{102}$
-------------	--	------------------	-----	-------------------

+33 04473.64

448+25 Ford =		$\frac{+12}{24.3}$	+65	$\frac{+87}{102}$
450+41 G. Ahead				

mal

Areas		Cut. Yds	
Exc.	Emb'd	Exc.	Emb'd

46.08

12797

510

00

14.11

29

17

1332.4

2376

00

S

11.4
38.3

✓

24.14

S

24.3

Sta 447 to 448 + 66 Ex 972.7 c.y.
Class
99.0 Slips 75% L. Rock 63.3"

242.28

S

13.5

Balance Cut Solid R. 909.4"
84.5 Haul 170. So for

214.09

S

11.6

" 81.9 N. "

112.8

" 400 from 447 + 60% 446 = 640

192.15

S

15.5

" 210 + 448 + 10% 449 + 60 = 315

219.4

Total Haul 955

146.41

S

6.5

110.2

91.64

161.33

S

72.2
1.6

823.7

Sta Grade.

448+41

L	C	R
$\frac{+04}{191}$	+36	$\frac{+4.3}{4.0}$ $\frac{+7.8}{10.0}$

+66

$\frac{00}{13.0}$	00	$\frac{00}{8.0}$
-------------------	----	------------------

448+91

2

$\frac{00}{10.5}$	-14	$\frac{-3.0}{11.5}$
-------------------	-----	---------------------

Boulders $\frac{3.0 \times 6.0 \times 6.0}{3.0 \times 4.0 \times 5.0} = 7.2$
 $\frac{3.0 \times 3.0 \times 3.0}{3.0 \times 3.0 \times 3.0}$

449+06

$\frac{00}{9.0}$	-17	$\frac{-4.3}{13.6}$
------------------	-----	---------------------

+16

$\frac{00}{8.0}$	-44	$\frac{-4.8}{14.2}$
------------------	-----	---------------------

+33 04473.64

+35

$\frac{-8.1}{19.1}$	-6.8	$\frac{-6.0}{16.0}$
---------------------	------	---------------------

+50

$\frac{-5.0}{14.5}$	-5.8	$\frac{-6.0}{16.0}$
---------------------	------	---------------------

+60

+2.00

$\frac{00}{8.0}$	-22	$\frac{-4.0}{13.0}$
------------------	-----	---------------------

Boulder $2 \times 4.0 \times 10.0 = 3.0$

+70

$\frac{00}{8.0}$	-12	$\frac{-1.7}{9.5}$
------------------	-----	--------------------

450

$\frac{-4.6}{13.3}$	-2.0	$\frac{-0.3}{7.5}$
---------------------	------	--------------------

Areas		Cub. Yds.	
Exc.	Embk	Exc.	Embk

82.48

8237

382

861.9

00

00

110.859

972.7

120

2090

Sta 449 to 450

7.2

16.7 Exc 10.2 Cy.

34.17

7.2

Solid Rock

185

6564

651 Sta 448+66 to 450+50

168.69

Embk 347.5 Cy.

82.1 made from Cut.

126.95

30.4

3710

3.0

9.9

16.45

3.0

30.2

37.95

9.7

274.6

✓ 274.6

Sta	Grade.	L	C	R	Ex
450+10		$\frac{-16}{94}$	-1.0	$\frac{00}{80}$	
+25		$\frac{-05}{77}$	-1.2	$\frac{-06}{79}$	
450+40 HB		$\frac{-88}{191}$	$\frac{-70}{70}$	$\frac{-48}{70}$	$\frac{-47}{138}$
+50 Toe		$\frac{-83}{114}$	$\frac{-72}{70}$	$\frac{-70}{96}$	$\frac{-68}{70}$
+87.0 Toe		$\frac{-78}{70}$	$\frac{-78}{107}$	$\frac{-78}{70}$	$\frac{-46}{63}$
450+98 HB		$\frac{-16}{89}$	$\frac{-36}{70}$	$\frac{-64}{70}$	$\frac{-70}{76.6}$
451+10		$\frac{00}{80}$	$\frac{-20}{70}$	-3.6	$\frac{-6.8}{4.0}$
+20		$\frac{00}{8.3}$	$\frac{00}{6.0}$	-3.0	$\frac{-6.0}{11.2}$
+30		$\frac{+5.0}{9.3}$	0.0	$\frac{-4.4}{10.4}$	Wall 5.8
+50		$\frac{+2.3}{8.6}$	$\frac{00}{3.0}$	-1.1	$\frac{-3.0}{11.5}$
+60		$\frac{+2.4}{8.6}$	0.0	$\frac{00}{8.0}$	End Wall 0.0

+2.00

Areas.

Cub. yds.

Exc. Embk Exc. Embk

1430

2746

76

1321

409

13425

244

347.5

248

118.88

Sta 450+87 to 451+60

44.5

Emb. 122.6 Cy. ✓

00

8156

0.1

24.3 made from cut

1.00

4968

39

124

20.00

1732

Sta 451+10 to 452+35

9.5

132 Exc. 179.8 Cy. S.R.

5.75

18.48

Have 70. So far

28

34

37 from 452+15

960

00

1226

to 451 = 43

126

289

waste 45.1

Sta Grade.

451+80

$\begin{array}{r} +2.0 \\ \hline 8.5 \end{array}$

+0.7

$\begin{array}{r} +2.6 \\ \hline 8.7 \end{array}$

452

$\begin{array}{r} +2.5 \\ \hline 8.6 \end{array}$

+2.4

$\begin{array}{r} +2.7 \\ \hline 8.7 \end{array}$

+15

+2.00

$\begin{array}{r} +3.2 \\ \hline 8.8 \end{array}$

+3.6

$\begin{array}{r} +4.4 \\ \hline 9.0 \end{array}$

$\begin{array}{r} +8.6 \\ \hline 9.0 \end{array}$

$\begin{array}{r} +8.0 \\ \hline 10.0 \end{array}$

+35

$\begin{array}{r} +5.8 \\ \hline 9.5 \end{array}$

+5.2

$\begin{array}{r} +5.4 \\ \hline 9.4 \end{array}$

End Tail

Areas.		Cub. Yds.	
Exc.	Embk	Exc	Embk
24.42		289	
		24.4	
41.56		34.0	
81.04		64.8	
93.94		152.1	
		27.7 = 1/2 56.	
		179.8	

24.42

289

24.4

41.56

34.0

81.04

64.8

152.1

27.7 = 1/2 56.

93.94

179.8

Sta
448+25=
450+41

Grade.

L
 $\frac{+4.2}{8.0}$

C
+3.3

R
 $\frac{+1.2}{8.3}$

E
48

+60

00

$\frac{+7.0}{9.8}$

+5.4

$\frac{+2.5}{8.6}$

87

+75

$\frac{+6.7}{9.7}$

+4.3

$\frac{+2.4}{8.6}$

70

+96.4 04473.6x

451

$\frac{+6.8}{9.7}$

+4.0

$\frac{+1.6}{8.4}$

69

+25

$\frac{+6.7}{9.7}$

+4.1

$\frac{+2.0}{8.5}$

7

+50

$\frac{+3.8}{9.0}$

+2.6

$\frac{+1.2}{8.3}$

4

+55

-3.02

$\frac{+3.0}{8.8}$

+1.8

$\frac{0.0}{8.0}$

2

+75

$\frac{0.0}{8.0}$

-1.2

$\frac{-2.6}{10.9}$

451+90

$\frac{-0.7}{8.0}$

-3.0

$\frac{-5.2}{14.8}$

452+25

$\frac{-1.6}{9.4}$

-4.2

$\frac{-7.3}{18.8}$

Areas Cub. Yds.
Exc. Embk Exc. Embk

48.50

5 2.5
47.9

87.68

Sta 450 + 416 + 451 + 75 = 326.6 ✓
5 3.6 Class
45.4 Slip Lo. Rock 34.0 Ck ✓

75.75

Balance S. Rock 292.6 "
5 7.5
67.4 Haul 76.6 North fr

69.80

" 250. from 450 + 856 + 452 + 70 = 463. ✓
5 11.2
65.7

72.11

5 8.1
53.1

42.49

5 0.5
6.4

27.12

00

5 0.6
6.7 5.0

00

20.44

326.6 ✓

20.9

54.85

94.1

90.37

76.2
196.2 ✓

<i>N_a</i>	<i>Grade.</i>	<i>L.</i>	<i>C.</i>	<i>R.</i>
452+50		$\frac{-1.8}{9.7}$	-3.5	$\frac{-6.3}{16.5}$
453		$\frac{-3.4}{12.1}$	-4.4	$\frac{-6.2}{16.3}$
+04.3	04467.36			
+15		$\frac{-7.0}{17.5}$	-8.0	$\frac{-9.0}{20.5}$
+35		$\frac{-5.4}{15.1}$	-10.6	$\frac{-13.2}{26.8}$
+50		$\frac{-3.4}{12.1}$	-6.4	$\frac{-12.4}{25.6}$
+80	-350	$\frac{-0.8}{8.2}$	-2.0	$\frac{-5.6}{15.4}$
454		$\frac{-2.6}{10.9}$	-3.6	$\frac{-5.6}{15.4}$
+10		$\frac{-2.4}{10.6}$	-4.0	$\frac{-5.2}{14.8}$
+35		$\frac{0.0}{8.0}$	-0.6	$\frac{-2.0}{10.0}$
454+65		$\frac{0.0}{8.0}$	-0.5	$\frac{-1.5}{9.2}$

Areas Cub. yds.
Exc. Emb't Exc. Emb't

7420

196.2

157.7

9608

84.5

20800

183.4

287.17

Sta 451 + 55 to 454 + 80

128.6 Emb 1002.8 cu. y.

175.94

made from cuts

123.3

4600

45.2

7604

28.4

77.40

41.6

12.40

12.2

00

9.55

4.9

1.7

4.9

1002.8

✓

✓ 280

Sta	Grade.	L.	C.	R.
454+80		$\frac{+2.8}{8.7}$	+1.8	$\frac{0.0}{8.0}$
455+25		$\frac{+7.1}{9.8}$	+6.0	$\frac{+5.2}{9.3}$
+40		$\frac{+6.7}{9.7}$	+5.1	$\frac{+5.0}{9.3}$
+60		$\frac{+3.8}{9.0}$	+2.5	$\frac{+2.2}{8.6}$
455+90		$\frac{+4.2}{9.1}$	+2.9	$\frac{+1.2}{8.3}$
456+30		$\frac{+7.6}{9.9}$	+6.2	$\frac{+4.2}{9.1}$
456+80		$\frac{+6.8}{9.7}$	+6.4	$\frac{+4.6}{9.2}$
457+20		$\frac{+2.0}{8.5}$	+2.6	$\frac{+3.2}{8.8}$
+40		$\frac{+7.0}{9.8}$	+5.3	$\frac{+4.0}{9.0}$
49	04457.80			
457+80		$\frac{+9.2}{10.3}$	+8.2	$\frac{+7.4}{9.9}$

-3.50

-3.17

Areas Cub. yds.
Exc Embk Exc. Embk

26.23 00 ⁴⁹
S 25.9
110.6

106.50 [✓] Sta 454+65 to 458+75 Exc. 1688.3 Cy.

S 172 Class
56.0 Slips Lo. Rock 214.7

95.25 Balance Solid 1473.6

S 124
52.3 Haul 68. Sr. fr

46.00 " 111.6 N "

S 2.9
51.6 " 420 from 455+60 to 453+40 = 924

46.84 " 850 " 457+50 to 459+70 = 1870

S 86
113.3 Total Haul 2794

106.10

S 26.8
196.5

106.08

S 16.1
110.6

43.29

S 5.2
50.8

93.82

S 27.1
180.0

149.22

185.6
S 43.3
^{1297.7}

✓ 2794

No	Sta	Grade.	L	C	R	Ex
4	458+20	+39 04448.95	$\frac{+5.8}{9.5}$	+5.7	$\frac{+6.0}{9.5}$	10
4	+60		$\frac{+2.0}{8.5}$	+3.2	$\frac{+2.8}{8.7}$	4
	+75		$\frac{0.0}{8.0}$	00	$\frac{0.0}{8.0}$	
4	458+85		$\frac{-0.8}{8.2}$	-2.0	$\frac{-2.2}{10.3}$	
	459+10	-286	$\frac{-1.7}{9.5}$	-1.6	$\frac{-3.8}{12.7}$	
	+25		$\frac{-7.2}{16.9}$	-3.8	$\frac{-7.0}{13.0} \frac{-6.1}{15.4}$	
	+40		$\frac{-12.2}{23.8} \frac{-14.8}{18.0}$	-14.0	$\frac{-14.4}{16.0} \frac{-11.0}{22.1}$	
	+50		$\frac{-10.6}{21.6}$	-15.0	$\frac{-14.5}{26.9}$	
	+65		$\frac{-6.8}{16.1}$	-11.5	$\frac{-15.2}{27.9}$	
	459+95		$\frac{-5.6}{14.7}$	-7.8	$\frac{-8.0}{8.0} \frac{-15.0}{27.6}$	

Areas

Cub. yds.

Exc Embk Exc Embk

101.35

12977

5 281

109.7

46.72

5 1.1

13.0

1449.6

00

00

238.750

1688.3

54

2900

30.6 Sta 458 + 75 to 460 + 28

37.01

Emb 1179.3 Cy.

43.0 made from cut.

11761

159.5

456.64

168.2

451.60

217.1

330.00

300.6

211.03

143.1

1067.5

Sta Grade.

460+10 HB

+28 Toe

+70 Toe

+80 HB

460+85

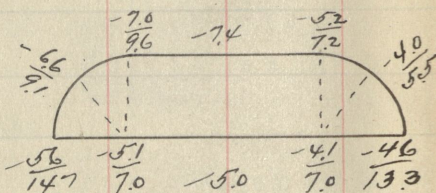
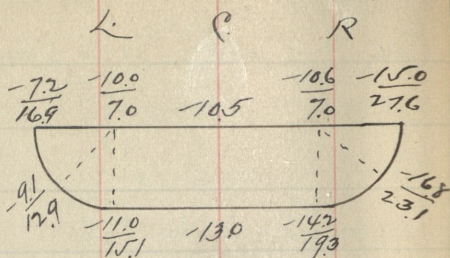
461+15

+35

+45

+50

461+75



-2.86

-4.5
13.2

-4.7

-4.2
12.8

-1.2
8.8

-1.5

-1.8
9.7

-1.2
8.8

-1.8

-2.0
10.0

0.0
8.0

0.0

0.0
8.0

+1.8
8.5

+2.2

+1.6
8.4

+7.8
10.0

+4.8

+4.2
9.1

Areas.		Cub. yds.	
Exc	Emb	Exc	Emb.
	304.28		1067.5
			111.8
			1179.3
			✓

17.7 Sta 460+70 to 461+45 ✓
 Emb 124.4 Cusps ✓
 17.7 Made from Cut. ✓

91.55
 64.6

24.38
 19.4

28.12
 5.2

00 00
 124.4 ✓

32.19
 5 0.1 Sta 461+45 to 462+45 Exc. 217.2 Cy.
 Class Slope Loose Rock 17.6 "
 Balance Solid " 199.6 "

93.84
 5 5.6 58.3 Haul 84.6 La free.
 " 100 from 461+90 to 463+80 = 190 ✓

5 105.8
 11.9
 184.6 ✓

✓ 94.4

Section 9

Sta	Grade	L	C	R
462		+92 10.3	+71	+67 97

Channel on R 431+75-433+15

Stations	L	R	Areas	C. Yds.
431+75 = 0	0.0	10.0	0.0	
	+63 6.0	+72 12.0	0.0 18.0	37.5
+25	0.0	+95 8.0	0.0 14.0	81.00
	+84 8.0	+95 14.0	0.0 23.0	121.6
+55	0.0	+84 8.0	0.0 13.0	137.75
	+70 7.0	+84 13.0	0.0 20.0	66.7
+70	0.0	+60 6.0	0.0 16.0	102.60
	+58 5.8	+58 11.0	0.0 16.0	45.7
+85	0.0	+40 4.0	0.0 14.0	62.00
	+40 4.0	+40 10.0	0.0 14.0	45.4
1+10	0.0	+08 1.0	0.0 5.0	36.00
	+08 1.0	+10 5.0	0.0 6.0	15.0
+30	0.0	+08 1.0	0.0 6.0	4.50
	+40 4.0	0.0	0.0	0.8
+40	0.0	0.0	0.0	332.70

Ditch to Divert Draw on R 436

0	0.0	0.0	0.0	
	+14 1.0	+10 5.0	0.0 6.0	1.9
+17	0.0	+37 7.0	0.0 7.0	6.00
	+28 2.8	+28 5.0	0.0 7.0	7.4
+34	0.0	+28 2.8	0.0 7.0	17.65
	+18 1.8	+18 6.0	0.0 7.0	14.5
+60	0.0	+46 4.6	0.0 6.0	12.45
	+45 4.5	+45 5.0	0.0 6.0	17.7
+88	0.0	+40 4.0	0.0 5.8	21.62
	+40 4.0	+40 4.0	0.0 5.8	14.2
1+08	0.0	+14 1.4	0.0 4.0	16.60
	+08 0.8	+16 3.0	0.0 4.0	10.6
+35	0.0	+08 0.8	0.0 4.0	4.66
	+45 4.5	0.0	0.0	0.9
+45	0.0	0.0	0.0	67.2

Areas.		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
13460		1846	
		326	
		2172	

Diversion Ditch 150' R 442

Stations			Areas	Cu. Yds.
0	0.0	0.0	0.0	2.9
+15	0.0	$\begin{smallmatrix} +20 & +16 & 0.0 \\ 1.4 & 6.0 & 7.0 \end{smallmatrix}$	10.48	10.9
+27	0.0	$\begin{smallmatrix} +54 & +48 & 0.0 \\ 4.0 & 9.0 & 10.0 \end{smallmatrix}$	38.40	20.0
+43	0.0	$\begin{smallmatrix} +53 & +57 & 0.0 \\ 2.0 & 6.0 & 7.0 \end{smallmatrix}$	28.65	23.3
+77	0.0	$\begin{smallmatrix} +24 & +24 & 0.0 \\ 1.0 & 3.6 & 4.0 \end{smallmatrix}$	8.40	6.0
1	0.0	$\begin{smallmatrix} +14 & +14 & 0.0 \\ 0.8 & 4.0 & 4.8 \end{smallmatrix}$	5.60	1.0
+10	0.0	0.0	0.0	64.1

Channel on L460

0	0.0	0.0	0.0	1.0
+05	0.0	$\begin{smallmatrix} +32 & 0.0 \\ 2.0 & 7.0 \end{smallmatrix}$	11.20	6.4
+25	0.0	$\begin{smallmatrix} +20 & +14 & 0.0 \\ 1.0 & 3.6 & 4.6 \end{smallmatrix}$	6.12	9.5
+50	0.0	$\begin{smallmatrix} +35 & +30 & 0.0 \\ 1.2 & 4.6 & 5.4 \end{smallmatrix}$	14.35	14.8
+95	0.0	$\begin{smallmatrix} +12 & 0.6 & 0.0 \\ 1.0 & 4.0 & 4.5 \end{smallmatrix}$	3.45	0.3
1	0.0	0.0	0.0	32.0

Section 9

Clearing

Stations	Width	Sq. Ft.	
412-416+50	75'	33750	✓
419-423	80x215	17200	✓ B. Pit on L
416+50-425	70	59500	✓
419-423	75x400	30000	✓ B. Pit on L
425-431	80	48000	✓
431-434	95	28500	✓
434-446+50	85	106250	✓
446+50-450	90	31500	✓
450-453 Tail	60	18000	✓
452+50-457+50	60	30000	✓
457+50-462	70	31500	✓

434200 = 9.96 Acres

Rip Rap

450+43	Toe Bank	{ 2.0 x 55 x 28.0 } { 2.0 x 75 x 18.0 }	21.1 C.Y.
451	" "	3.0 x 50 x 65.0	36.1 "

✓ 57.2 Cu. Yds.

Section 9

Ditches

24

on L
on L

Stations	Size	Total Excav.	Lo. Rock	S. Rock
423+50 ⁷ / ₁₆	Surf. D.			
424+60	on R 2.0 x 3.0 x 13.5	30.0		30.0
431+75 ⁷ / ₁₆	Channel on R (See P. 23)	332.7		332.7
433+15				
436	Ditch " " (" " " ")	67.2		67.2
444	Diversion D. " " (" " " ")	64.1	21.4	42.7
444+25	Surf. Ditch on R 1 x 3 x 30.	3.3	3.3	
450+70 ⁷ / ₁₆	Channel { 2 x 4 x 10. 3 x 4 x 50. 3 x 3 x 15.}	30.2		30.2
457+45				
458+75 ⁷ / ₁₆				
459	Tail Ditch on L 1 x 3 x 25	2.8	2.8	
460	Channel on L (See Page 23)	32.0		32.0
		562.3	27.5	534.8

25

Box Culverts

Yds.

423+25	2 x 2 1/2 x 36	inside	1190	FT. B.M.
441+30	2 x 2 1/2 x 29	"	987	" "
446	1 x 2 1/2 x 38	"	992	" "
			3169	" "

v g f f

Section 9

PAGE	Acres	Excavation—Cub. Yards.			
		Total Cut	Earth	Lo. Rock	S. Rock
1		✓430.5✓		✓180.9✓	✓249.6✓
1					
2		✓275.0✓		✓275.0✓	
3					
4					
5		✓288.2✓		✓20.9✓	✓267.3✓
6		✓1951.9✓		✓164.9✓	✓1784.0✓
7					
8					
9		✓2167.6✓		✓404.1✓	✓1763.5✓
11		✓0.5✓			✓0.5✓
11		✓13.0✓			✓13.0✓
12		✓186.8✓		✓15.7✓	✓171.1✓
13		✓335.8✓		✓25.8✓	✓310.0✓
14		✓972.7✓		✓63.3✓	✓909.4✓
15		✓10.2✓			✓10.2✓
16		✓179.8✓			✓179.8✓
18		✓326.6✓		✓34.0✓	✓292.6✓
19					
20		✓1688.3✓		✓214.7✓	✓1473.6✓
21					
22		✓217.2✓		✓17.6✓	✓199.6✓
24	✓9.96✓	✓562.3✓		✓27.5✓	✓534.8✓
	9.96✓	9606.4✓		1444.4✓	8162.0✓

Summary

25

Cu. Yds. Total in Banks	Cu. Yds. Banks made from Cuts	Borrow - Cu. Yds. Earth Lo. Rock	Cu. Yds. Haul	Cu. Yds. Riprap	Lumber in Adverts F.B.M.
✓132.6	✓132.6				
✓119.4	✓119.4			✓220	
✓40.9	✓40.9			✓792	
✓3132.5		✓1566.3	✓1566.2		
✓8.5	✓8.5			✓72	
✓880.7	✓880.7			✓3465	
✓2306.5	✓2084.8		✓221.7	✓787	
✓290.1	✓290.1			✓4948	
✓1628.1	✓1598.1		✓300		
✓13.9	✓13.9			✓400	
✓1332.4	✓1332.4			✓340	
				✓955	
✓347.5	✓347.5			✓43	
✓122.6	✓122.6			✓463	
✓1002.8	✓1002.8			✓2794	
✓1179.3	✓1179.3			✓190	
✓124.4	✓124.4				✓572 3169
12662.2	9278.0	1566.3	1817.9	1546.9	572 3169

SECTION 9 COST

CLEARING	9.96	✓ ACRES @	\$ 35.00 ✓	✓ 348.60
EXCAVATION L. ROCK	1444.4	✓ CU. YDS	0.45 ✓	✓ 649.98
"	S. ROCK	8162.0	" 0.90 ✓	✓ 7345.80
BORROW	EARTH	1566.3	" 0.15 ✓	✓ 234.94
"	L. ROCK	1817.9	" 0.40 ✓	✓ 727.16
"	S. ROCK		"	
HAUL	100 FT	15469. ✓	" 0.015 ✓	✓ 232.04
LUMBER	FT. BM	3169 ✓	12.00M ✓	✓ 38.03
RIP RAP	572 ✓	"	1.00 ✓	✓ 57.20
				✓ 9633.75

48.60

49.98

45.80

34.94

27.16

32.04

38.03

57.20

33.75

v. 211

Section 10

Sta.	Grade.	L.	C.	R.
462		$\frac{+9.2}{10.3}$	+7.1	$\frac{+6.7}{9.7}$
+10		$\frac{+7.7}{9.9}$	+6.3	$\frac{+5.5}{9.4}$
+35	286	$\frac{+4.4}{9.1}$	$\frac{+2.6}{7.0}$	$\frac{+3.0}{8.8}$
+50		$\frac{+1.7}{8.4}$	+0.8	$\frac{0.0}{8.0}$
+65		$\frac{0.0}{8.0}$	-0.6	$\frac{-1.6}{9.4}$
+75	04436.49	$\frac{-1.1}{8.7}$	-2.0	$\frac{-1.4}{9.1}$
+85		$\frac{0.0}{8.0}$	-1.3	$\frac{-1.8}{9.7}$
463		$\frac{+1.4}{8.4}$	+0.2	$\frac{0.0}{8.0}$
+20	318	$\frac{+2.2}{8.6}$	+2.0	$\frac{+2.6}{8.7}$
463+35		$\frac{0.0}{8.0}$	+1.2	$\frac{+0.8}{8.2}$

Areas.		Cub Yds.	
Exc.	Emb.	Exc.	Emb.
13460		Sta 462 to 462+65 Exp	
		46.0 172.7 Cub Yds. Solid Rock	
11360		Haul 137 n. fr.	
		73.7 " 159 from 462+20 to 463+60 = 223	
45.78		16.4	
1336	00	25 7.0	
		138.6	
00	10.87	34.1 54. Sta 462+50 to 463	
		172.7	
	26.55	6.9 Emb 20.4 Exp.	
		made from cuts.	
		8.2	
00	17.81	13 3.3	
		20.4	
724	00	16.2 Sta 462+85 to 463+40	
3650		Exc. 58.7 Cub Yds Solid Rock	
		137 Haul north face	
1292	00	0.8 0.2	
		32.0	
		26.7 54.	
		58.7	

Sta.	Grade.	L	C	R
463+40		$\frac{-1.9}{85}$	00	$\frac{00}{80}$
+50		$\frac{-9.2}{19.7}$	-3.0	$\frac{-4.7}{13.4}$
+60		$\frac{-13.0}{24.9}$	-8.0	$\frac{-11.4}{22.7}$
+75		$\frac{-8.4}{18.6}$	-13.8	$\frac{-17.6}{31.2}$
+75		Box Culvert 2' x 3' x 56' = 2241 BM		
463+90		$\frac{-3.5}{17.2}$	-6.0	$\frac{-8.8}{19.1}$
464+05		$\frac{00}{8.0}$	-1.1	$\frac{-2.5}{10.7}$
+15		$\frac{+1.4}{8.4}$	+0.6	$\frac{00}{8.0}$
+25		$\frac{+3.0}{8.8}$	+2.0	$\frac{+1.3}{8.3}$
+50		$\frac{+1.8}{8.5}$	+1.6	$\frac{+1.2}{8.3}$
465		$\frac{+2.2}{8.6}$	+2.0	$\frac{+1.4}{8.4}$

-318

Areas.

Cub. yds.

Exc. Emb. Exc. Emb.

00

350

0.2

Sta 463+35 to 464+15

188 Emb. 490.2 cu.

Made from Cuts

98.30

69.3

275.80

197.3

434.62

158.8

136.95

43.5

00

19.04

1.3

2.3

490.2

10.52

00

8.3

34.30

27.7

25.44

52.6

31.40

40.5

130.4

✓ 29.1

Sta	Grade.	L	C.	R
465+25		$\frac{+3.1}{8.8}$	$+3.4$	$\frac{+3.4}{8.9}$
+50		$\frac{+4.2}{9.1}$	$+5.2$	$\frac{+5.8}{9.5}$
466		$\frac{+1.0}{8.3}$	$+2.1$	$\frac{+2.8}{8.7}$
+30		$\frac{0.0}{8.0}$	00	$\frac{0.0}{8.0}$
+50	-3.8	$\frac{0.0}{8.0}$	-1.3	$\frac{-1.7}{9.5}$
467		$\frac{-2.6}{10.9}$	-3.2	$\frac{-4.6}{13.9}$
+50		$\frac{-4.7}{15.5}$	-5.6	$\frac{-7.0}{17.5}$
+90		$\frac{-4.4}{13.6}$	-5.8	$\frac{-8.4}{19.6}$
468		$\frac{-6.2}{16.3}$	-8.5	$\frac{-11.5}{24.2}$
468+15		$\frac{-11.4}{24.1}$	-12.8	$\frac{-18.0}{34.0}$

Areas.		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.

56.09

66.9

88.36

112.4

33.05

18.4

00

00

328.1

6.4

17.33

76.1

64.88

133.35

141.08

234.08

474.74

Sta 464+05 to 466+30

Exc. 328.1 Cul Yds.

Class 25% LR = 820'4"

" 75% SR = 246.1 "

Have 80 Yds. So. free

" 50. " " "

" 198 " from 465+40

to 467+30 = 376 Yds

Sta 466+30 to 468+50

183.5 Emb 968.2 Cul Yds.

made from cuts

203.3

69.5

196.9

135.5

871.2

199.9

Sta	Grade	L	C	R
468 + 25		$\frac{-8.0}{19.0}$	-8.5	$\frac{-12.0}{25.0}$
+45		$\frac{0.0}{8.0}$	00	$\frac{-1.2}{8.8}$
+50		$\frac{+1.8}{8.5}$	+1.3	$\frac{0.0}{8.0}$
+85		$\frac{+8.3}{10.1}$	+6.8	$\frac{+5.0}{9.3}$
469	-318	$\frac{+6.6}{9.7}$	+5.6	$\frac{+4.2}{9.1}$
		Boulder 2.0 x 4.0 x 10.0 = 3.0		
+25		$\frac{+4.6}{9.2}$	+3.7	$\frac{+3.0}{8.8}$
+40		$\frac{+7.4}{9.9}$	+7.6	$\frac{+7.2}{9.8}$
+50		$\frac{+9.0}{10.3}$	+8.2	$\frac{+6.2}{9.6}$
+75		$\frac{+8.8}{10.2}$	+6.6	$\frac{+4.0}{9.0}$
470		$\frac{+7.9}{10.0}$	+5.2	$\frac{+2.5}{8.6}$

Areas.		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
	257.00		871.2 ✓
			96.7
00	42.0	16	0.3
			968.2 ✓
179.3	00		✓
		88.9	
119.16	5	3.5	
		59.7	
95.84	5	10.0	
		3.0	
		73.9	
637.0	5	5.0	
		54.7	
1332.6	5	2.7	
		51.0	
142.39	5	6.3	
		119.0	
114.56	5	6.8	
		94.7	
899.6		84.2	
		665.0 ✓	

Start 468 + 45 to 470 + 70

Exc. 897.9 Cub. Yds.

Class max. outside

regular section LR = 55.0

Balance cut SR = 542.9

Haul 184 Yds. to free

" 164.9 " " "

" 220. " from

469 + 40 to 468 = 308 ✓

Haul 200 Yds from

469 + 80 + 471 + 10 = 260 ✓

Total Haul 568.9 ✓

WHD

✓ 94.7

Sta	Grade.	L	C	R
470+25		$\frac{+8.0}{10.0}$	+5.1	$\frac{+3.0}{88}$
+50		$\frac{+5.2}{9.3}$	+3.0	$\frac{+18}{85}$
+60	-3.18	$\frac{+2.1}{8.5}$	+1.0	$\frac{00}{80}$
+70		$\frac{00}{8.0}$	-1.4	$\frac{-40}{13.0}$
+83.8	④4410.78			
+85		$\frac{-3.0}{11.5}$	-5.0	$\frac{-70}{17.5}$
471		$\frac{-7.0}{17.5}$	-10.0	$\frac{-13.0}{27.1}$
+20	-3.50	$\frac{-13.5}{27.2}$	-14.2	$\frac{-188}{35.2}$
+45		$\frac{-12.8}{26.2}$	-13.7	$\frac{-13.1}{26.6}$
471+80		$\frac{-5.1}{14.6}$	-5.2	$\frac{-6.1}{16.1}$
472+05		$\frac{00}{80}$	00	$\frac{-1.2}{88}$

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
		665.0	
9194		5	98
		5	98
			67.9

5470		5	11
			132

1665	00		
------	----	--	--

		21	35
		768.9	
00	2870	129.056	
		897.9	378

107.50

Sta 470+60 to 472+10

111.6 Emb. 1362.4 Cy.

294.40

made from cuts

315.0

556.09

466.9

452.33

370.3

119.02

57.0

00

420

13

0.3

1362.4

✓ 99.0

Sta	Grade	L	C	R
47 472+10		$\frac{+16}{8.4}$	+1.0	$\frac{00}{8.0}$

+25		$\frac{+4.3}{9.1}$	+3.4	$\frac{+3.8}{8.8}$
-----	--	--------------------	------	--------------------

+50		$\frac{+7.8}{10.0}$	+6.0	$\frac{+4.4}{9.1}$
-----	--	---------------------	------	--------------------

+70		$\frac{+7.0}{9.8}$	+4.6	$\frac{+2.0}{8.5}$
-----	--	--------------------	------	--------------------

+90		$\frac{+6.2}{9.6}$	+4.6	$\frac{+2.8}{8.7}$
-----	--	--------------------	------	--------------------

+947 04403.40.

4 473		$\frac{+6.2}{9.6}$	+3.3	$\frac{+1.6}{8.4}$
-------	--	--------------------	------	--------------------

+15		$\frac{+5.4}{9.4}$	+3.8	$\frac{+2.0}{8.5}$
-----	--	--------------------	------	--------------------

+30		$\frac{+6.0}{9.5}$	+2.4	$\frac{00}{8.0}$
-----	--	--------------------	------	------------------

4 +45		$\frac{+8.5}{10.1}$	+5.7	$\frac{+2.8}{8.7}$
-------	--	---------------------	------	--------------------

4 473+55		$\frac{+7.8}{10.0}$	+3.7	$\frac{00}{8.0}$
----------	--	---------------------	------	------------------

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
00		1.3	
8.0	1460		
		21.0	
3.3			
8.8	6083	5	2.4
			77.3
1.4			
7.1	10610	5	5.8
			68.2
2.0			
5.5	78.09	5	8.4
			Sta 472+05 to 474+75
			57.8 Exc. 753.8 Cy.
2.8			
7.7	78.09	5	5.5
			Class Slip LR = 59.30
			25.7 " Balance SR 694.5
6			
4	60.90	5	7.2
			Haul 90.9 So. free
			34.6 " 106. Opposite north free
0			
5	63.61	5	5.4
			" 40 from 473+10 to 471+50
			= 656. Cu yds.
			30.2
1			
0	45.00	5	5.0
			39.9
8			
7	98.78	5	2.6
			30.2
2			
6	64.50	00	21.5
			2.0
			450.0

Sta	Grade.	L	C.	R
4 473+70		$\frac{+32}{88}$	00	$\frac{-30}{115}$
+85		$\frac{+32}{88}$	+26	$\frac{00}{80}$
474		$\frac{+73}{98}$	+48	$\frac{+16}{84}$
+25		$\frac{+30}{88}$	+08	$\frac{00}{80}$
+40	-32.6	$\frac{+0.7}{82}$ $\frac{00}{.60}$	-27	$\frac{-80}{190}$
+50		$\frac{+34}{89}$	00	$\frac{00}{80}$
+65		$\frac{+86}{102}$	+52	$\frac{00}{80}$
+75		$\frac{00}{80}$	00	$\frac{-178}{337}$
4 475		$\frac{-0.8}{82}$	64	$\frac{-170}{325}$
4 475+20		$\frac{-1.3}{90}$	-32	$\frac{-10.8}{307}$

Areas.

Cub. yds.

Exc. Emb. Exc. Emb.

450.0

2.0

12.80

105.05

4.4

473+55 to 473+85

5

2.4

Emb. 3.9 Cy.

13.2

1.9

Made from cut opposite

346.4

0.0

3.9

31.6

792.8

5

0.2

45.4

Sta 474+25 to 474+50

Emb. 22.7 Cy.

18.72

0.0

5

0.9

5.4

11.3

Made from cut opposite

0.70

61.75

5

0.7

2.7

11.4

136.0

0.0

5

5.5

26.5

22.7

817.2

0.0

5

2.9

15.1

11.5

Sta 474+65 to 476+70

Emb. 1103.4 Cy.

Made from cuts.

0.0

62.30

606.9

146.9

5.4

753.8

118.0

192.54

117.0

123.37

199.0

44.59

✓ 999

Sta	Grade	L	C	R
4 475+50		$\frac{-58}{15.7}$	-9.3	$\frac{-10.5}{22.7}$
+75		$\frac{-14}{9.1}$	-6.8	$\frac{-16.8}{31.6}$
476		$\frac{0.0}{8.0}$	-6.4	$\frac{-16.4}{31.6}$
+25		$\frac{+2.6}{8.7}$	$\frac{0.0}{5.0}$	$\frac{-24.6}{43.9}$
+50	-32.6	$\frac{+3.6}{8.9}$	$\frac{0.0}{2.0}$	$\frac{-16.9}{32.3}$
+70		$\frac{+4.4}{9.1}$	+0.5	$\frac{0.0}{8.0}$
+75		$\frac{+5.1}{9.3}$	+3.2	$\frac{+1.4}{8.4}$
477		$\frac{+7.0}{9.8}$	+2.6	$\frac{0.0}{8.0}$
4 +25		$\frac{+9.0}{10.4}$	+5.0	$\frac{+2.2}{8.6}$
4 477+50		$\frac{+11.2}{10.8}$	+5.4	$\frac{+1.0}{8.3}$

Areas

Cub. Yds.

Exc. Emb. Exc. Emb.

445.9

235.65

202.0

200.68

178.1

00 184.12

5

1.0

1.2

150.0

390 139.89

6.8 1.056

10.80 88.31

12.1

21.8

1103.4

21.88

00

7.1 Sta 476 to 480 Exc 2983.3 Cy.

54.32

Class Slip LR

156.1

48.8 Balance I.R. 2827.2 "

51.14

Haul 148. So. free

5

0.2

" 215.7 "

68.9

" 650. from 477 to 476 = 975 Cy.

" 225. " 478 + 25 " 471 + 25 = 1575 "

= Total Haul 2550.0

977.0

5

4.7 Woad 1536.9

91.7

100.37

121.6

364.1

Sta	Grade.	L	C	R	
477+75		$\frac{+136}{110}$	+88	$\frac{+44}{91}$	16
478		$\frac{+210}{133}$	+136	$\frac{+82}{101}$	270
+20		$\frac{+22.8}{137}$	+204	$\frac{+19.0}{40} \frac{+6.4}{96}$	370
+35		$\frac{+27.2}{14.8}$	+237	$\frac{+21.8}{100} \frac{+18.4}{126}$	521
+50	-326	$\frac{+28.8}{15.2}$	+230	$\frac{+15.4}{119}$	48
+60		$\frac{+27.6}{14.9}$	+204	$\frac{+7.8}{100}$	39
+80		$\frac{+21.6}{13.4}$	+152	$\frac{+2.8}{2.0} \frac{00}{8.0}$	2
478+90		$\frac{+18.8}{12.7}$	+112	$\frac{+4.4}{91}$	2
479+01.4	0/383.62	Boulder 5.0x7.0x9.0 = 11.7			
479+10		$\frac{+26.6}{14.7}$	+180	$\frac{+15.4}{11.9}$	4
479+30	-350	$\frac{+20.0}{13.0}$	+100	$\frac{+4.2}{91}$	2

Exc.	Emb.	Exc.	Emb.
		3641	
162.20	S 128		
	S 92		
	2028		
215.92	S 68		
	241.3		
375.74	S 265		
	2493		
521.62	S 307		
	2806		
488.45	S 82		
	1637		
395.58	S 3.9		
	226.0		
21464	S 21		
	795		
21488	S 340		
	717		
	2305		
40740	S 216		
	227.7		
20730	123.2		
	2546.21		

Sta	Grad.	L	C	R	
479+50		$\frac{+13.8}{11.5}$	+7.2	$\frac{0.0}{8.0}$	Exo 125
+60		$\frac{+15.2}{11.8}$	+7.8	$\frac{0.0}{6.0}$	-2.4 10.6 130
+75		$\frac{+18.4}{12.6}$	+16.0	$\frac{0.0}{8.0}$	130
480		$\frac{0.0}{8.0}$	-6.8	-40.8 58.0	End Wall 0
+25	-3.50	$\frac{-2.0}{10.0}$	-8.0	-50.1 62.6	Wall 93 Slope $\frac{1}{2}:1$
+50		$\frac{1.2}{8.8}$	-6.4	-40.8 58.0	Wall 00 Slope
+60		$\frac{0.0}{8.0}$	-7.8	-40.8 58.0	Wall 00
+75		$\frac{0.0}{8.0}$	-8.0	-46.7 61.0	Wall 53 Slope $\frac{1}{2}:1$
Boulder 1.9 x 3.0 x 15.0 = 17					
481		$\frac{+4.4}{9.1}$	$\frac{0.0}{5.0}$	-15.2 10.0	-50.8 63.0 Wall 100 Slope $\frac{1}{2}:1$
481+10		$\frac{+17.6}{12.4}$	$\frac{+5.6}{1.0}$	$\frac{0.0}{0.5}$	-5.8 63.1 Wall 102 Slope $\frac{1}{2}:1$

R	Areas		Cub. Yds.		
	Exc.	Emb.	Exc.	Emb.	
0 0	125.40	00	5 16 5 15 47.3	2546.2 1.6 1.5 0.1	Sta. 479+50 to 483+65 Emb. 8500.5 C.Y. made from cuts
24 06	130.22	120	5 23 102.4	2.3 0.1	
0 0	138.40	00			
.8 End 0 Wall	00	367.20	736 2774.9 2084.59 2983.3	113.3 455.2	
Wall 93 Slope 2:1		616.06		436.8	
Wall 00 Slope		327.36		134.7	
Wall 00		400.20		258.0	
Wall 59 Slope 2:1	00	528.70	1.7 3.1	509.6	Sta. 480+75 to 481+25 Exc. 466 C.Y. S.R.V. Hauled free opposite
Wall 100 Slope 2:1	660	572.10		188 202.1	
Wall 102 Slope 2:1	94.92	519.00	176 41.2 5.4 46.6	393.5 2503.4	

Sta	Grade.	L.	C.	R.
481+25		$\frac{00}{8.0}$	-11.5	$\frac{-58.2}{66.7}$ Wall 174 Slope $\frac{1}{2}:1$
+50	-35.0	$\frac{-2.2}{10.3}$	-11.0	$\frac{-53.2}{64.2}$ Wall 124 Slope $\frac{1}{2}:1$
481+88 ⁵ Back = 481+81 Ahead	4373.58	$\frac{-2.3}{10.5}$	-10.0	$\frac{-44.5}{59.8}$ Wall 37 Slope $\frac{1}{2}:1$
482+30	-31.7	$\frac{-2.0}{9.8}$	-9.7	$\frac{-56.0}{70.5}$ Wall 120 Slope $\frac{1}{4}:1$
+45		$\frac{-4.4}{13.1}$	-11.4	$\frac{-54.2}{70.1}$ Wall 102 Slope $\frac{1}{4}:1$
+53	4371.30			
482+85		$\frac{-3.6}{12.0}$	-11.6	$\frac{-51.0}{69.3}$ Wall 70 Slope $\frac{1}{4}:1$
483+05		$\frac{-2.5}{10.4}$	-10.0	$\frac{-44.0}{67.5}$ End Wall
+25	-28.6	$\frac{-1.4}{8.9}$	-8.4	$\frac{-34.2}{54.0}$
+40		$\frac{0.0}{8.0}$	-4.1	$\frac{-30.0}{48.3}$
483+65		$\frac{+5.8}{9.5}$	+2.9	$\frac{0.0}{8.0}$

Areas

Cub. yds.

Exc. Emb. Exc. Emb.

1174

e 2:1

00

894.95

2503.4

782.6

1124

e 2:1

793.37

974.1

137

e 2:1

572.93

1327.0

1120

e 4:1

889.46

505.6

1102

e 4:1

930.69

1307.8

7.0

e 4:1

834.79

513.7

Wall

552.25

348.5

388.78

169.5

00

221.44

15.0

68.3

8500.5

48.58

00

215.0

230.0

Sta	Grade.	L	C	R
484		$\frac{+17.5}{12.4}$	+15.4	$\frac{+9.4}{10.4}$
+25		$\frac{+27.6}{14.9}$	+21.9	$\frac{+17.4}{12.4}$
+50		$\frac{+35.0}{16.8}$	+27.9	$\frac{+23.0}{13.8}$
+75		$\frac{+43.3}{18.8}$	$\frac{+39.4}{12.0}$ +35.4	$\frac{+26.8}{14.7}$
485		$\frac{+48.7}{20.2}$	$\frac{+45.4}{13.0}$ +41.6	$\frac{+35.2}{16.8}$
+25		$\frac{+48.0}{20.0}$	+47.0	$\frac{+46.1 + 47.5}{7.0 \quad 19.9}$
+50		$\frac{+42.3}{18.6}$	+41.6	$\frac{+41.3}{18.3}$
+65		$\frac{+37.2}{17.3}$	+37.5	$\frac{+35.8}{17.0}$
+75		$\frac{+30.7}{15.7}$	+28.9	$\frac{+31.2}{15.8}$
485 + 85		$\frac{+25.6}{14.4}$	+24.7	$\frac{+22.7}{13.7}$

- 2.86

Areas.

Cub. Yds.

Exc. Emb.

Exc. Emb.

283.16

\$ 57.8
\$ 74.2
352.8

478.93

\$ 81.0
526.8

658.87

\$ 59
704.8

863.55

\$ 08
907.9

No 483 + 40 to 486 + 40 Exc. 7437.8 Cy.

Class Ships. L.R.

744.1 "

1097.43

\$ 246

Balance L.R.

6693.7 "

1114.1

Haul 495 Yds. to pier

" 3356 from 484 + 80 to 482 + 35 = 8207.

1308.95

\$ 183.6

" 2700 " Arriving cut 695 ft. = 18765.

Total Haul 26972.

1116.1 Waste 723.8

1101.92

\$ 150.0
565.9

935.13

\$ 966
303.3

702.78

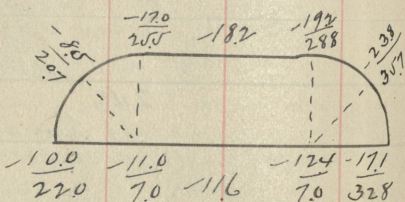
\$ 456
230.2

540.24

246.3

7018.3 ✓

Sta	Grade.	L	C	R
486		$\frac{+18.7}{12.7}$	$+17.2$	$\frac{+15.3}{11.8}$
+192	4360.83			
+20		$\frac{+9.3}{10.3}$	$+7.4$	$\frac{+7.0}{9.8}$
+35		$\frac{+2.9}{8.7}$	$+1.3$	$\frac{0.0}{8.0}$
486+40 H/B	-3.383	$\frac{0.0}{8.0}$	-0.6	$\frac{-2.0}{10.0}$
489+66 Toe				
490+23 H/B				
+38	4346.66			
+50		$\frac{+4.8}{14.2}$	-7.0	$\frac{-11.0}{23.5}$
+75	-2.86	$\frac{-2.2}{10.3}$	-3.6	$\frac{-5.2}{14.8}$
+90		$\frac{0.0}{8.0}$	-1.2	$\frac{-2.8}{11.2}$
491		$\frac{+1.6}{8.4}$	$+0.9$	$\frac{0.0}{8.0}$



Areas		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
		7018.3	
34670		5	240
			1801

139.57

450

v2.46

00

14

0.8

7268.8

0.8

00

1240

169.054.

7437.8

Sta 489+66 to 491

Emb 690.7 cu.

246.4 made from cut north

405.56

296.4

187.25

119.6

71.08

257

00

2132

1.7

2.6

1378

00

690.7

28.6

30.3

v GAD

Sta	Grade.	L	C	R.
491+25		$\frac{+4.0}{9.0}$	+2.9	$\frac{+1.7}{8.4}$

+25.5 $\circ 4344.16$

+45		$\frac{+3.8}{9.0}$	+1.6	$\frac{0.0}{8.0}$
-----	--	--------------------	------	-------------------

+60	-317	$\frac{+4.4}{9.1}$	+0.4	$\frac{0.0}{2.0} - \frac{8.3}{19.5}$
-----	------	--------------------	------	--------------------------------------

+80		$\frac{+6.0}{9.5}$	+2.8	$\frac{0.0}{8.0}$
-----	--	--------------------	------	-------------------

+97.5 $\circ 4341.88$

492		$\frac{+10.2}{10.6}$	+6.7	$\frac{+4.0}{9.0}$
-----	--	----------------------	------	--------------------

+15		$\frac{+9.6}{10.4}$	+6.3	$\frac{+5.0}{9.3}$
-----	--	---------------------	------	--------------------

+30	-350	$\frac{+12.0}{11.0}$	+9.7	$\frac{+8.1}{12.0}$
-----	------	----------------------	------	---------------------

+50		$\frac{+16.0}{12.0}$	+12.8	$\frac{+10.7}{10.7}$
-----	--	----------------------	-------	----------------------

493		$\frac{+20.4}{13.1}$	+16.5	$\frac{+13.6}{11.4}$
-----	--	----------------------	-------	----------------------

493+25		$\frac{+21.0}{13.3}$	+17.8	$\frac{+14.0}{11.5}$
--------	--	----------------------	-------	----------------------

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
		30.3	
4803		28.4	
2880	00	13.5	3.8 Sta 491 + 45 to 491 + 80
1982	20.75	25.3	Emb 8.9 Cl. made
		8.9	51 from Cut
4850	00	25	
		63.3	
122.46		62	Sta 490 + 90 to 495 + 60 Exp. 494.2 Cy
		67.5	Class Slips L.R. 50.4 "
			Balance S.R. 4389.8 "
120.46		12.4	Haul 80. yds. L. free
		84.1	" 2953 " " "
			" 480 from 492 + 30 to 490 + 30 = 960.
			" 3810 " 493 + 90 to 496 + 30 = 914.4
182.25			Total Haul: 10104.4
		21.3	
		160.9	
252.08		92.7	
		546.5	
338.13		66.3	
		323.5	
360.72		343.2	
		1887.9	

Sta	Grade.	L.	C.	R.
493+55		$\frac{+16.4}{12.1}$	+13.4	$\frac{+10.0}{10.5}$
+75		$\frac{+21.8}{13.5}$	+17.7	$\frac{+13.0}{11.3}$
494		$\frac{+24.0}{14.0}$	+19.8	$\frac{+16.0}{12.0}$
+50		$\frac{+23.0}{13.8}$	+19.0	$\frac{+15.6}{11.9}$
494+75		$\frac{+22.3}{13.6}$	+18.2	$\frac{+14.8}{11.7}$
495+10		$\frac{+18.6}{12.7}$	+16.4	$\frac{+13.4}{11.4}$
+30		$\frac{+11.4}{10.9}$	+9.4	$\frac{+8.0}{10.0}$
+50		$\frac{+3.1}{8.8}$	+2.2	$\frac{+1.8}{8.5}$
+60		$\frac{0.0}{8.0}$	00	$\frac{0.0}{8.0}$
495+80		$\frac{-9.0}{20.5}$	-11.6	$\frac{-12.0}{25.0}$

-3.6.0

Areas.

Cub. yds.

Exc. Emb. Exc. Emb.

1887.9

257.02

S 526

S 397

228.0

358.68

S 34.0

369.3

417.40

S 71.6

755.5

398.55

S 47.9

359.8

378.63

S 70.4

456.5

325.62

S 26.3

185.7

175.83

S 6.5

79.4

38.63

7.2

4668.3

00

00 59.271.9

4940.2

125.0

337.40

485.3

610.3

Sta	Grade.	L	C	R
496		$\frac{-188}{352}$	-224	$\frac{-216}{391}$
+20		$\frac{-25.0}{445}$	-342	$\frac{-328}{562}$
+40	350	$\frac{-29.0}{505}$	-350	$\frac{-42.0}{70.0}$
+60	-	$\frac{-20.2}{373}$	-292	$\frac{-42.2}{70.3}$
+80		$\frac{-17.5}{333}$	-234	$\frac{-32.2}{56.3}$
497		$\frac{-12.8}{262}$	-176	$\frac{-27.0}{47.5}$
+20	04323.60	$\frac{-8.0}{19.0}$	-122	$\frac{-24.2}{43.3}$
+50	317	$\frac{-4.5}{137}$	-82	$\frac{-19.2}{35.8}$
+75		$\frac{0.0}{8.0}$	-28	$\frac{-9.0}{20.5}$
+92	04321.32			
497+95		$\frac{+4.2}{9.1}$	+20	$\frac{0.0}{8.0}$

Areas.		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
	972.86		610.3
		1009.7	
1753.27		1522.5	
2357.55		1535.9	
1789.36			
1210.57			
787.86			
492.73			
285.90			
00	714.0		
339.0	00		

Sta. 495+60 to 497+95
1111.1 Emb. 7619.5 Cy.
6444.2 Cuyds. made from
cuts + swell on borrow
material - Balance made
740.1 from measured pit see
Page 57
Class borrow
4743 2.5% Loose Rock = 293.8
75% Solid = 881.5
432.6 Haul on borrowed
material 2331.
1654
8.4 17.6
8.0 7619.5
16.4

MM

242

Sta	Grade.	L	C	R
498		$\frac{+15.3}{9.3}$	+29	$\frac{+1.3}{8.3}$
+25		$\frac{+9.2}{10.3}$	+66	$\frac{+4.0}{9.0}$
+50		$\frac{+13.0}{11.3}$	+92	$\frac{+6.4}{9.6}$
+75		$\frac{+14.8}{11.7}$	+115	$\frac{+8.6}{10.2}$
499	-286	$\frac{+15.4}{11.9}$	+132	$\frac{+10.7}{10.7}$
+25		$\frac{+17.6}{12.4}$	+146	$\frac{+12.0}{11.0}$
+50		$\frac{+17.5}{12.4}$	+148	$\frac{+12.4}{11.1}$
+75		$\frac{+17.3}{12.3}$	+146	$\frac{+12.2}{11.1}$
500		$\frac{+14.5}{11.6}$	+122	$\frac{+11.0}{10.8}$
500 + 25		$\frac{+11.1}{10.8}$	+87	$\frac{+7.7}{9.9}$

Areas.	Exc.	Emb.	Cub. yds.	Exc.	Emb.
51.92			16.4		
		5	28		
			78.0		
116.49					
		5	84		
			134.3		
173.74					
		5	16.2		
			182.1		
219.53					
			Sta 497+75 to 500+80	Exc.	236.96
		5	23.6	Classo Slips Lg R	✓ 187.5 ✓
			219.0	Balance Solid "	2182.1 ✓
253.56					
			Haul 204.6	So. free	
		5	24.7	" 203 "	" "
			251.3	" 600. from 498+80. to 497+25 =	930. Ex.
			" 1190. "	499+60 "	501+60 = 2380. "
				Total Haul	✓ 3310. "
289.22					
		5	33.3		
			269.8		
293.50					
		5	37.9		
			269.6		
288.82					
		5	27.6		
			244.2		
238.64					
		5	12.1		
			187.0		
165.25					
			117.4		
			2155.7		

Sta	Grade	L	C	R
4500+50		$\begin{array}{r} +66 \\ 9.7 \end{array}$	$+5.0$	$\begin{array}{r} +38 \\ 9.0 \end{array}$

+70		$\begin{array}{r} +2.3 \\ 8.6 \end{array}$	$+0.9$	$\begin{array}{r} 0.0 \\ 8.0 \end{array}$
-----	--	--	--------	---

+80		$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	-1.4	$\begin{array}{r} -4.3 \\ 13.5 \end{array}$
-----	--	---	--------	---

501	-286	$\begin{array}{r} -4.8 \\ 14.2 \end{array}$	-6.4	$\begin{array}{r} -9.0 \\ 20.5 \end{array}$
-----	--------	---	--------	---

+25		$\begin{array}{r} -9.2 \\ 20.8 \end{array}$	-12.2	$\begin{array}{r} -16.3 \\ 31.5 \end{array}$
-----	--	---	---------	--

+50		$\begin{array}{r} -12.8 \\ 26.2 \end{array}$	-15.5	$\begin{array}{r} -18.4 \\ 34.6 \end{array}$
-----	--	--	---------	--

+65		$\begin{array}{r} -15.6 \\ 30.4 \end{array}$	-17.0	$\begin{array}{r} -18.4 \\ 34.6 \end{array}$
-----	--	--	---------	--

77.2 04310.31

+80		$\begin{array}{r} -25.6 \\ 40.4 \end{array}$	-22.2	$\begin{array}{r} -19.8 \\ 36.7 \end{array}$
-----	--	--	---------	--

502	-317	$\begin{array}{r} -23.5 \\ 42.3 \end{array}$	-28.8	$\begin{array}{r} -29.6 \\ 27.0 \end{array}$	$\begin{array}{r} -26.4 \\ 46.6 \end{array}$
-----	--------	--	---------	--	--

+35

Box Culvert $2 \times 2 \frac{1}{2} \times 90' = 2990 \text{ BM}$

502+20		$\begin{array}{r} -16.0 \\ 31.0 \end{array}$	-20.3	$\begin{array}{r} -30.6 \\ 52.9 \end{array}$
--------	--	--	---------	--

+49.2 04308.03

Areas

Cub. yds.

Exc. Emb Exc. Emb

38
9.0
88.35
5 09
389

1667 00

13
3.5
00 30.10
21
2197.6
172.054
2369.6

159.34

262.8

408.28

457.7

580.40

Sta. 500+70 to 503+50

347.8 Emb 5570.0 Cy.

671.50

4770. Cy. made from
cuts + swell on borrow
material. Balance

483.8 from measured cut
see page 57

1070.21

Class borrow 2.5% 1000
Sta. 500+70 to 503+50

954.1 25% L Rock = 200.0 Cy

1505.85

75% S.R. = 600.0 "

933.5 Haul on borrow

1014.69

material 1560.
851.9

4291.6

Two quantities
probably omitted.
but does not
affect results
as emb. is made
from measured
excavation

Sta	Grade.	L	C	R
502+50		$\frac{-10.1}{22.1}$	-13.8	$\frac{-20.4}{37.6}$

+75		$\frac{-8.5}{19.7}$	-10.6	$\frac{-14.6}{28.9}$
-----	--	---------------------	-------	----------------------

503	-35.0	$\frac{-9.7}{21.5}$	-13.0	$\frac{-16.6}{31.9}$
-----	-------	---------------------	-------	----------------------

+25		$\frac{-3.8}{12.7}$	-5.8	$\frac{-10.7}{23.0}$
-----	--	---------------------	------	----------------------

+40		$\frac{0.0}{8.0}$	-1.2	$\frac{-3.8}{12.7}$
-----	--	-------------------	------	---------------------

+50		$\frac{+3.2}{8.8}$	+1.5	$\frac{0.0}{8.0}$
-----	--	--------------------	------	-------------------

+66 04303.95

+70		$\frac{+8.5}{10.1}$	+6.3	$\frac{+3.6}{8.9}$
-----	--	---------------------	------	--------------------

504	-32.6	$\frac{+15.6}{11.9}$	+12.8	$\frac{+9.5}{10.4}$
-----	-------	----------------------	-------	---------------------

+50		$\frac{+24.0}{14.0}$	+21.0	$\frac{+18.4}{12.6}$
-----	--	----------------------	-------	----------------------

504+75		$\frac{+26.6}{14.7}$	+22.8	$\frac{+21.0}{13.3}$
--------	--	----------------------	-------	----------------------

Areas
Exc Emb Exc Emb
4291.6

518.68

396.8

338.43

360.0

439.15

274.7

154.28

50.0

00 25.72

3.1 3.2

25.40 00

5376.3
193.7 *extra width of bank*

49.5 5590.0

108.25

5 7.4 Class Slo. L. R 3352.5
195.2 Balance L. R 680.4
2667.1

243.12

5 1319 Haul 263. So. Free
640.8 " 404. " "
" 2000. from 504+60 to 502+35 = 4500.
" 590. " 505+10 to 507+20 = 1239.
Total Haul. 5739.6

448.90

5 227.4
443.7

509.60

476.0
2175.0

✓ 2911

Sta	Grade.	L	C.	R
505		$\frac{+25.0}{14.3}$	$+24.0$	$\frac{+21.5}{13.4}$

$+25$		$\frac{+18.6}{12.6}$	$+18.4$	$\frac{+17.8}{12.5}$
-------	--	----------------------	---------	----------------------

$+50$		$\frac{+11.4}{10.9}$	$+10.3$	$\frac{+8.6}{10.2}$
-------	--	----------------------	---------	---------------------

$+75$		$\frac{0.0}{8.0}$	0.0	$\frac{0.0}{8.0}$
-------	--	-------------------	-------	-------------------

$+85$		$\frac{-0.5}{15.2}$	-4.1	$\frac{-6.0}{16.0}$
-------	--	---------------------	--------	---------------------

506		$\frac{-7.2}{17.8}$	-13.0	$\frac{-24.4}{43.6}$
-----	--	---------------------	---------	----------------------

Boulder $3.0 \times 3.0 \times 3.0 = 1.0$

$+25$		$\frac{-2.0}{10.0}$	-5.2	$\frac{-13.2}{26.8}$
-------	--	---------------------	--------	----------------------

$+43.8$	04294.91			
---------	------------	--	--	--

$+65$		$\frac{-0.4}{7.6}$	-2.3	$\frac{-6.3}{16.5}$
-------	--	--------------------	--------	---------------------

507		$\frac{-2.2}{10.3}$	-4.7	$\frac{-9.0}{20.5}$
-----	--	---------------------	--------	---------------------

507 + 20		$\frac{-6.0}{16.0}$	-9.3	$\frac{-14.6}{28.9}$
----------	--	---------------------	--------	----------------------

Areas		Cub. yds.	
Exc	Emb	Exc.	Emb.
21.5		2175.0	
134	518.40	5	168.1
178		414.3	
2.5	376.52	5	101.7
86		3	35.8
12	188.67		261.7
00		5	13.1
8.0	00	873	
		3257.0	
		95.50754	
		3352.5	
		*	19.3
	104.21		
		170.5	
44	509.70		Sta 505+75 to 508+35
36		1.0	304.9 Embk 1567.0 Cy.
32	148.88	1.0	made from cuts
6.8			145.2
3	51.17		
5		105.5 Sta. 506	Exp. 1.0 Cy.
2	111.58		<u>Solid Rock</u>
5		145.4	
46	280.88	352.2	
9		1243.0	

Sta	Grade.	L	C	R
507+70		$\frac{-1.0}{8.5}$	-4.0	$\frac{-10.0}{22.0}$
508		$\frac{-6.4}{16.6}$	-8.5	$\frac{-14.6}{28.9}$
+20		$\frac{0.0}{8.0}$	-2.0	$\frac{-4.8}{14.2}$
+35		$\frac{+4.5}{9.1}$	+2.3	$\frac{0.0}{8.0}$
+55	-34.2	$\frac{+7.7}{9.9}$	+5.0	$\frac{+2.8}{8.7}$
508+80		$\frac{+9.1}{10.3}$	+6.7	$\frac{+3.9}{9.0}$
509+05		$\frac{+7.4}{9.9}$	+4.7	$\frac{+2.5}{8.6}$
+25		$\frac{+7.0}{9.8}$	+4.8	$\frac{+2.5}{8.6}$
+40		$\frac{+3.2}{8.8}$	+1.5	$\frac{0.0}{8.0}$
509+55		$\frac{0.0}{8.0}$	-1.0	$\frac{-2.7}{11.0}$

Areas.

Cub. Yds.

Exc.

Emb.

Exc.

Emb

12430

99.50

203.5

266.88

113.3

00

39.00

7.0

7.2

37.67

00

1567.0

88.50

S

2.0

46.7 No 508+20 to 510+25 Exp. 5208

Class material in regular section

1/2 Ls. Rock = 218.9 Cy.

Class Slips Ls. R. = 32.6 "

95.0 Balance Ls. Rock

Total Ls. Rock = 251.5 Cy.

" So. " = 269.3 "

116.66

S

5.7

92.5 Haul 166 Yds. So. free

83.08

S

8.2

" 40.3 " " + opposite free

61.2 " 100 Cy from 508+95 to 507+80

82.16

S

2.6

= 115 Cy.

29.9 " 164. " " 509+40 to

254.0

00

521+50 in back up 780' = 1279'

4.7

3.5

Total Haul 1394'

00

18.95

0.1

4.9

355.6

8.4

Sta	Grade	L	P	R
509+60		$\frac{+1.0}{8.3}$	$\frac{0.0}{6.0}$	$\frac{-5.1}{14.6}$

+77		$\frac{+7.0}{9.8}$	+3.8	$\frac{0.0}{8.0}$
-----	--	--------------------	------	-------------------

510	-342	$\frac{+0.6}{9.4}$	+3.8	$\frac{+2.5}{8.6}$
-----	------	--------------------	------	--------------------

+10		$\frac{+4.0}{9.0}$	+2.5	$\frac{0.0}{8.0}$
-----	--	--------------------	------	-------------------

+25		$\frac{0.0}{8.0}$	-2.2	$\frac{-3.2}{11.8}$
+26.5	04281.82			

+35		$\frac{0.0}{8.0}$	-1.3	$\frac{-5.5}{10.2}$
-----	--	-------------------	------	---------------------

+65		$\frac{+4.7}{9.2}$	+2.0	$\frac{0.0}{8.0}$
-----	--	--------------------	------	-------------------

511	-330	$\frac{+11.2}{10.8}$	+7.2	$\frac{+4.6}{9.2}$
-----	------	----------------------	------	--------------------

+20		$\frac{+11.8}{11.0}$	+9.0	$\frac{+6.6}{9.7}$
-----	--	----------------------	------	--------------------

511+50		$\frac{+15.8}{12.0}$	+12.0	$\frac{+8.4}{10.1}$
--------	--	----------------------	-------	---------------------

Areas.

Cubyds.

Exc.	Emb.	Exc.	Emb.
		355.6	8.4

1.00 34.33

\$	39
	19.8

Sta. 509+40 to 509+77

Emth 15.6 Cy.
15.6

61.82 00

\$	87
	54.7

made from cut

66.60

\$	15
	19.2

37.25 00

Sta. 510+10 to 510+65

69
470.3
50.5450
520.8

6.1 Emth 31.3 Cy.

00 32.98

made from cut.

125

00 34.33

\$	10.0
	133

127

31.3

36.00 00

\$	39.9
	111.0

135.20

\$	9.7
	111.8

166.75

\$	63.7
	220.1

229.40

171.4

750.9

✓

Sta	Grade.	L.	C.	R.
511+70		$\frac{+16.2}{121}$	$+12.2$	$\frac{+8.3}{101}$

511+85		$\frac{+13.5}{114}$	$+10.6$	$\frac{+7.3}{98}$
--------	--	---------------------	---------	-------------------

512+05		$\frac{+17.2}{123}$	$+13.6$	$\frac{+9.4}{104}$
--------	--	---------------------	---------	--------------------

Boulders $\frac{2.0 \times 4.0 \times 6.0}{2.0 \times 3.0 \times 5.0} = 3.0$

+25		$\frac{+13.7}{114}$	$+11.0$	$\frac{+8.2}{101}$
-----	--	---------------------	---------	--------------------

+75

- 3.30

		$\frac{+9.0}{10.3}$	$+4.8$	$\frac{+3.0}{88}$
--	--	---------------------	--------	-------------------

Boulders $\frac{6.0 \times 7.0 \times 8.0}{4.0 \times 4.0 \times 5.0} = 16.6$
 $\frac{2.0 \times 2.0 \times 2.0}{2.0 \times 2.0 \times 2.0} = 1.0$

513		$\frac{+8.1}{10.0}$	$+4.0$	$\frac{+0.7}{82}$
-----	--	---------------------	--------	-------------------

Boulders $\frac{1.0 \times 5.0 \times 6.0}{3.0 \times 4.0 \times 4.0} = 2.9$

+05

		$\frac{+6.8}{9.7}$	$+3.8$	$\frac{0.0}{8.0}$
--	--	--------------------	--------	-------------------

+25

		$\frac{0.0}{8.0}$	$+1.8$	$\frac{-5.8}{15.0}$
--	--	-------------------	--------	---------------------

+50

		$\frac{-8.8}{19.1}$	$\frac{-13.0}{10.0}$	$\frac{-11.4}{8.0}$	$\frac{-16.2}{29.3}$
--	--	---------------------	----------------------	---------------------	----------------------

513+65

		$\frac{-8.0}{18.0}$	-19.6	$\frac{-26.0}{20.0}$	$\frac{-28.2}{45.6}$
--	--	---------------------	---------	----------------------	----------------------

Areas. Cb yds.
Exc. Emb. Exc. Emb.

23342 5 356

1192
5 33.6

19556

5 353

1690

Sta. 510+35 to 513+25

Exc. 19991 Cuy.

26076

30

Class Slips LR 349.5 Cuy.

5 172.9
40.6

Balance SR. 1649.6 "

20585

5 589

Haul 275 yds N free

2775

" 1350 " from 511+85 to

9384

513+95 =

2835 Cuy.

16.6

5 76.6
22.4

Haul 217 yds from 510+85 to

7160

29

521+45 in lock up 640' = 1389 "

5 122
0.4

Total Haul. 4224 "

6083

00

150

10.1

18420

00

41.00

157.150

Sta 513+05 to 515

1999.1

198.1 Embk 1982.7 Cuy.

38686

made from cuts

332.4

809.90

492.7

10333

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Section 10

Sta	Grade	L	C.	R
513+85		$\frac{-44}{131}$	-10.4	$\frac{-376}{587}$
514+10		$\frac{-35}{122}$	-8.2	$\frac{-120}{200} \frac{-232}{389}$
+30		$\frac{-7.0}{166}$	-13.4	$\frac{-214}{364}$
+5.0	-33.0	$\frac{-2.0}{10.0}$	-8.4	$\frac{-216}{367}$
+58		$\frac{00}{8.0}$	-3.2	$\frac{-110}{221}$
+70		$\frac{+5.3}{9.3}$	+0.8	$\frac{00}{2.0} \frac{-41}{126}$
515		$\frac{+5.0}{9.3}$	+1.8	$\frac{00}{8.0}$

Add to Loose Rock Excavation for Slips
removed after Cuts were measured

483+40 to 486+40 ~ 10.0 cu.

497+75 to 500+80 ~ 37.0 "

503+40 to 505+75 ~ 45.0 "

508+20 to 510+25 ~ 10.0 "

Loose Rock 102.0 Culls.

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.

520.36

1033.3

346.0

226.87

252.4

452.50

271.6

278.74

541 Sta. 514+58 to 515

00 86.66

Take 54.5 C.Y. S.R.

3.8

21.5 Hand 38 yds. from

25.72 10.25

514+85 to

34.0 3.8

521+40 in

37.8 1982.7

35.57

0059.

16.7

Backup 245'

54.5

= 93 yds.

1244

Section 10

Borrow Pit on Left Sta 497+50 to 500+80

Stations	L	C.	Area	Cu. Yds.	Sta.
497+50	$\frac{00}{17.0}$		00	5.1	46
+75	$\begin{pmatrix} +16 \\ 285 \end{pmatrix} \frac{00}{285}$	$\begin{pmatrix} 00 \\ 8.0 \end{pmatrix}$	16.40	43.1	46
+95	$\begin{pmatrix} +100 \\ 360 \end{pmatrix} \begin{pmatrix} +40 \\ 270 \end{pmatrix} \frac{00}{110}$	$\begin{pmatrix} +42 \\ 9.1 \end{pmatrix}$	100.09	20.0	46
498	$\begin{pmatrix} +118 \\ 360 \end{pmatrix} \begin{pmatrix} +50 \\ 270 \end{pmatrix} \frac{00}{110}$	$\begin{pmatrix} +53 \\ 9.3 \end{pmatrix}$	116.13	124.2	46
+25	$\begin{pmatrix} +162 \\ 390 \end{pmatrix} \begin{pmatrix} +60 \\ 240 \end{pmatrix} \begin{pmatrix} +40 \\ 140 \end{pmatrix} \frac{00}{108}$	$\begin{pmatrix} +92 \\ 10.3 \end{pmatrix}$	152.17	147.8	46
+50	$\begin{pmatrix} +190 \\ 380 \end{pmatrix} \begin{pmatrix} +110 \\ 270 \end{pmatrix} \begin{pmatrix} +76 \\ 154 \end{pmatrix} \frac{00}{118}$	$\begin{pmatrix} +130 \\ 11.3 \end{pmatrix}$	166.99	175.6	50
+75	$\begin{pmatrix} +238 \\ 430 \end{pmatrix} \begin{pmatrix} +150 \\ 320 \end{pmatrix} \begin{pmatrix} +122 \\ 210 \end{pmatrix} \frac{00}{118}$	$\begin{pmatrix} +148 \\ 11.7 \end{pmatrix}$	212.35	199.8	50
499	$\begin{pmatrix} +254 \\ 440 \end{pmatrix} \begin{pmatrix} +152 \\ 300 \end{pmatrix} \begin{pmatrix} +122 \\ 204 \end{pmatrix} \frac{00}{112}$	$\begin{pmatrix} +154 \\ 11.9 \end{pmatrix}$	219.13	209.0	50
+25	$\begin{pmatrix} +260 \\ 440 \end{pmatrix} \begin{pmatrix} +155 \\ 300 \end{pmatrix} \begin{pmatrix} +130 \\ 190 \end{pmatrix} \frac{00}{116}$	$\begin{pmatrix} +176 \\ 12.4 \end{pmatrix}$	232.25	225.1	50
+50	$\begin{pmatrix} +268 \\ 450 \end{pmatrix} \begin{pmatrix} +170 \\ 310 \end{pmatrix} \begin{pmatrix} +152 \\ 256 \end{pmatrix} \frac{00}{112}$	$\begin{pmatrix} +175 \\ 12.4 \end{pmatrix}$	253.89	229.4	50
+75	$\begin{pmatrix} +272 \\ 450 \end{pmatrix} \begin{pmatrix} +158 \\ 320 \end{pmatrix} \begin{pmatrix} +138 \\ 220 \end{pmatrix} \frac{00}{110}$	$\begin{pmatrix} +173 \\ 12.3 \end{pmatrix}$	241.67	197.7	46
500	$\begin{pmatrix} +274 \\ 470 \end{pmatrix} \begin{pmatrix} +150 \\ 312 \end{pmatrix} \begin{pmatrix} +120 \\ 202 \end{pmatrix} \frac{00}{140}$	$\begin{pmatrix} +145 \\ 11.6 \end{pmatrix}$	185.36	173.1	50
+25	$\begin{pmatrix} +168 \\ 382 \end{pmatrix} \begin{pmatrix} +110 \\ 318 \end{pmatrix} \begin{pmatrix} +77 \\ 210 \end{pmatrix} \frac{00}{160}$	$\begin{pmatrix} +111 \\ 10.8 \end{pmatrix}$	188.58	158.2	50
+50	$\begin{pmatrix} +106 \\ 354 \end{pmatrix} \begin{pmatrix} +31 \\ 258 \end{pmatrix} \begin{pmatrix} +24 \\ 160 \end{pmatrix} \frac{00}{140}$	$\begin{pmatrix} 66 \\ 8.7 \end{pmatrix}$	131.52	70.1	50
+70	$\begin{pmatrix} +54 \\ 350 \end{pmatrix} \begin{pmatrix} +20 \\ 240 \end{pmatrix} \begin{pmatrix} +0.6 \\ 120 \end{pmatrix} \frac{00}{115}$	$\begin{pmatrix} +23 \\ 8.6 \end{pmatrix}$	57.88	7.1	4
+80	$\frac{00}{8.0}$		00	1975.3	

figures in ring show original surface

Have 65.3 yds So. free

" 1110 from 498+90 to 496+80 = 2331.4

" 800 " 500 " 501+95 = 1560.4

Section 10

Ditches

51

500+80

Cu. Yds.	Stations	Size	Total		Cu. Yds.	
			Exca.		Lo R.	S. R.
5.1	463+75	Inlet to Culvert 40x5.0x5.0	3.7	✓		3.7
43.1	464+05 1/2					
	466+30	Side Ditch on L	16.7	✓		16.7
20.0	481	Surface " " 10x2.0x4.2	3.1	✓		3.1
124.2	495+60	Tail " " " 10x2.5x5.0	4.6	✓		4.6
147.8	497	Diversion Ditch on L 2.5x3.5x22.5	72.9	✓	36.4	36.5
175.6	497+75 1/2	Ditch through Cut on Left				
	501+10	2.7x4.2x330.	138.6	✓		138.6
199.8	501+10	Tail Ditch on L				
	507+30 1/2	1x3x50.	5.5	✓	5.5	
209.0	507+90	Channel on L				
		2.2x6.5x50	26.4	✓	13.2	13.2
225.1			271.5	✓	55.1	216.4

229.4

Box Culverts

197.7	463+75	2x3 1/2 x 56	inside	2241	Ft. B.M.	
173.1						
168.2	502+35	2x2 1/2 x 90	"	2990	"	"
70.1				5231	"	"

7.1

480+75 1/2 481+40 Slope Wall on R

$$4.0 \times 5.5 \times 66.0 = 540 \text{ cu. yd.}$$

Section 10

Cart Road around Cut Sta 486-482

Stations	L	R	Areas	Cu. Yds.	Width of Road Bed in Cut
486					
= 0		0.0	0.0		
+ 05	0.0	$\frac{+2.0}{4.0}$	3.00	0.2	3.0
+ 20	0.0	0.0	0.0	0.6	
+ 50		0.0	0.0		
+ 55	0.0	$\frac{+3.8}{4.0}$	5.70	0.5	3.0
+ 85	0.0	$\frac{+4.0}{12.0}$	22.00	15.4	11.0
1+10	0.0	$\frac{+7.2}{2.0} \frac{+7.2}{12.5}$	73.80	44.4	12.0
+ 40	0.0	$\frac{+2.0}{9.0}$	8.00	45.4	8.0
+ 85	0.0	$\frac{+7.0}{14.0}$	35.00	35.8	12.0
+ 95	0.0	$\frac{+3.8}{1.0} \frac{+11.0}{5.0} \frac{+15.2}{18.0}$	163.80	36.8	13.0
2+05	0.0	$\frac{+10.8}{3.0} \frac{+14.5}{10.8}$	94.57	47.8	8.0
+ 28	0.0	$\frac{+2.6}{1.0} \frac{+9.4}{3.0} \frac{+14.0}{11.0}$	85.90	76.9	8.0
+ 40	0.0	$\frac{+1.6}{1.0} \frac{+3.4}{8.0}$	14.90	22.4	6.0
3	0.0	$\frac{+3.2}{7.0}$	6.40	23.7	4.0
+ 60	0.0	$\frac{+2.6}{7.0}$	5.20	12.9	4.0
+ 80		0.0	0.0	1.3	
				364.1	Solid Rock

SPUR ON L - 465+50

Sta	L C R			Areas		Cub Yds	
				Cut	Fill	Exc	Emb.
465+50							
= 0	0.0	0.0	0.0				
+30	0.0	0.0	0.0	0.0		0.8	
+50	^{+20+14.00} 5.34 30.00	0.0	0.0	3.35		2.2	
+85	0.0	0.0	0.0	0.0		1.0	
1	^{+0.8} 5.2	^{+0.3} 0.3	^{+0.0} 5.0	3.53		8.4	
+25	^{+1.6} 5.4	^{+1.7} 1.7	^{+0.6} 5.2	14.51		8.0	
+45	^{+2.0} 5.8	^{+0.4} 0.4	^{+0.0} 5.0	7.10	0.0	2.2	2.0
+70	0.0	-0.8	-0.8	0.0	6.48		27.4
2	^{-2.5} 8.7	^{-2.7} 2.7	^{-4.0} 11.0		42.84		34.5
+25	^{-2.0} 8.0	^{-2.4} 2.4	^{-2.6} 8.9		31.78		8.8
+40	0.0	0.0	0.0	0.0	0.0	2.1	
+50	^{+1.6} 5.4	^{+1.0} 1.0	^{+0.9} 5.2	11.55		24.7	72.7
Class Exc.				5 R. 247	CY.		
Borrow {				4 R. 240	"		
				2 R. 240	"		

Clearing on Sec. 10

462 to 468	80'	Wide =	48000	32 FT.
468 to 478	75	"	75000	"
478 " 480	80	"	16000	"
480 " 490	85	"	85000	"
490 " 496+50	80	"	52000	"
499+50 503	90	"	31500	"
504 " 510	80	"	48000	"
510 " 515	75	"	37500	"

902 Acres. 393000 "

Section 10

PAGE	Acres.	Excavation - Cub. Yds				C. Yds Total
		Total Cut	Earth	Lo. Rock	S. Rock	
27		✓ 172.7			✓ 172.7	✓ 120.4
27		✓ 58.7			✓ 58.7	
28						✓ 490.2
29		✓ 328.1		✓ 82.0	✓ 246.1	✓ 1968.2
30		✓ 897.9		✓ 55.0	✓ 842.9	
31						✓ 1362.4
32		✓ 753.8		✓ 59.3	✓ 694.5	
33						✓ 1130.0
34		✓ 2983.3		✓ 156.1	✓ 2827.2	
36		✓ 466			✓ 466	✓ 8500.5
38		✓ 7437.8		✓ 744.1	✓ 6693.7	
39						✓ 690.7
40		✓ 4940.2		✓ 550.4	✓ 4389.8	✓ 89
42						✓ 7619.5
43		✓ 2369.6		✓ 187.5	✓ 2182.1	
44						✓ 5570.0
45		✓ 3352.5		✓ 685.4	✓ 2667.1	
46		✓ 1.0			✓ 1.0	✓ 1567.0
47		✓ 520.8		✓ 251.5	✓ 269.3	
48						✓ 46.9
49		✓ 1999.1		✓ 349.5	✓ 1649.6	✓ 1982.7
50		✓ 54.5			✓ 54.5	
50		✓ 102.0		✓ 102.0		
51		✓ 271.5		✓ 55.1	✓ 216.4	
52		✓ 364.1			✓ 364.1	✓ 72.7
52	✓ 9.02	✓ 24.7			✓ 24.7	✓ 48.0
	✓ 9.02	26678.9	✓	3277.9	23401.0	30005.4 30030.1

Summary.

53

Cu. Yds Banks made from	Borrow-Cu. Yds.	Cu. Yds. Haul	Cu. Yds. Slope Wall	Lumber in Culverts F.B.M.
Cuts	Earth	Lo. Rock	St. Rock	
120.4	✓ 120.4		✓ 223.	
✓ 490.5	✓ 490.2			
✓ 968.2	✓ 968.2		✓ 376.	
			✓ 568	
✓ 1362.4	✓ 1362.4		✓ 656.	
✓ 1130.0	✓ 1130.0		✓ 2550.	
✓ 500.5	✓ 8500.5		✓ 26972	
✓ 690.7	✓ 690.7		✓ 10104	
✓ 8.9	✓ 8.9		✓ 2331	
✓ 619.5	✓ 644.4	✓ 293.8	✓ 3310	
		✓ 881.5	✓ 1560	
✓ 570.0	✓ 4770.0	✓ 200.0	✓ 5739	
✓ 600.0		✓ 600.0	✓ 1394	
✓ 567.0	✓ 1567.0		✓ 4224	
✓ 46.9	✓ 46.9		✓ 93	
✓ 827	✓ 1982.7			✓ 540
				✓ 5231
727	297	✓ 24.0	✓ 24.0	
480				
28006.8	✓ 24.0	✓ 517.8	✓ 1481.5	✓ 60100
✓ 2982.1	✓ 24.0			✓ 54.0
				✓ 5231

✓ 99.0

SECTION 10 COST

CLEARING	9 ⁰² ACRES @ .35 ⁰⁰	✓	315.70
EXCAVATION L. ROCK	3277.9 CU. YDS	✓	45
"	S. ROCK 23401.0	✓	.90
BORROW	EARTH 24.0	✓	.15
"	L. ROCK 517.8	✓	.40
"	S. ROCK 1481.5	✓	.90
HAUL	100 FT. 60100.	✓	.01½
LUMBER	FT. BM. 5231.	✓	12 ⁰⁰
SLOPE WALL	540	✓	2 ⁰⁰
			25467.99

T

315.70 ✓

475.05 ✓

060.90 ✓

360 ✓

207.12 ✓

333.35 ✓

901.50 ✓

62.77 ✓

108.00 ✓25467.99

✓ 475

Section 11

Sta	Grade.	L	C	R
515		$\frac{+5.0}{9.3}$	+1.8	$\frac{0.0}{8.0}$
+10		$\frac{+8.6}{10.2}$	+5.6	$\frac{+3.1}{8.8}$
+20	-33.0	$\frac{+10.8}{10.7}$	+8.4	$\frac{+5.0}{9.3}$
+50		$\frac{+15.0}{11.8}$	+11.5	$\frac{+9.0}{10.3}$
515+85		$\frac{+17.4}{12.4}$	+14.3	$\frac{+11.6}{10.9}$
516+05 ² Back =	-35.0	$\frac{+14.2}{11.6}$	+11.0	$\frac{+9.0}{10.3}$
516+09 ² Ahead		$\frac{+7.8}{10.0}$	+5.5	$\frac{+3.7}{8.9}$
+40		$\frac{+3.8}{9.0}$	+1.3	$\frac{0.0}{8.0}$
516+75		$\frac{0.0}{8.0}$	-2.3	$\frac{-4.9}{14.3}$
517+13		$\frac{-7.4}{18.1}$	-11.1	$\frac{-14.1}{20.8} \quad \frac{-11.0}{23.5}$

Areas Cub. yds.
Exc Emb. Exc. Emb.

35.57 00
S 30
251

100.00
S 88
458 Sta. 515 to 516 + 75 Exc. 1347.4 Cy.

147.20
S 472
2057 Class Slips L.R. = 2327 Cy.
Balance L.R. = 11147 ✓

223.08
S 730
327.8 Haul 260.1 yds. 7. per
" 650. yds. from 515+80 to

282.60
S 486
185.6 517+50 = 1105. Cy.
Haul 338 yds. from 515+30 to

213.25
S 454
174.6 521+30 in back up 210 = 710. Cy.
Total Haul 1815. "

97.98
S 67
416.0

26.25 00

4.8 7.9
00 4280 1248.1 ✓
993.50
1347.4 ✓ 263.4

331.57 ✓
3030
5743

1.0
35

✓

Sta	Grade.	L	C	R
517+38		$\begin{array}{r} -5.3 \\ 15.0 \end{array}$	$\begin{array}{r} -17.0 \\ 12.2 \\ 7.6 \end{array}$	$\begin{array}{r} -8.6 \\ 19.9 \end{array}$
+53		$\begin{array}{r} -7.0 \\ 17.5 \end{array}$	$\begin{array}{r} -17.0 \\ -14.9 \\ 5.0 \end{array}$	$\begin{array}{r} -5.0 \\ 13.5 \\ 14.5 \end{array}$
+70			Box Culvert $1 \times 1\frac{1}{2} \times 90 = 1764 \text{ BM}$	
+71		$\begin{array}{r} -10.5 \\ 22.7 \end{array}$	$\begin{array}{r} -11.1 \\ -9.4 \\ 8.4 \end{array}$	$\begin{array}{r} -5.5 \\ 15.2 \end{array}$
517+75		$\begin{array}{r} -5.1 \\ 14.6 \end{array}$	$\begin{array}{r} -7.8 \\ -8.3 \\ 8.0 \end{array}$	$\begin{array}{r} -5.1 \\ 14.6 \end{array}$
518+05 = 520+65 Back Up		$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	$\begin{array}{r} -5.7 \\ -3.8 \\ 4.8 \end{array}$	$\begin{array}{r} -2.0 \\ 10.0 \\ 7.0 \end{array}$ RB on R
518+05		$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	$\begin{array}{r} -7.3 \\ -3.8 \\ 17.2 \end{array}$	$\begin{array}{r} -16.1 \\ 4.8 \\ 18.3 \end{array}$ RB on R 24.2
+35		$\begin{array}{r} +4.8 \\ 9.2 \end{array}$	$\begin{array}{r} 0.0 \\ +1.0 \\ 2.0 \end{array}$	$\begin{array}{r} -3.3 \\ 11.2 \\ 33.2 \end{array}$ 18.2
+60		$\begin{array}{r} +4.8 \\ 9.2 \end{array}$	$\begin{array}{r} 0.0 \\ +2.8 \\ 7.4 \end{array}$	$\begin{array}{r} -4.8 \\ 21.7 \end{array}$ 14.5
+80		$\begin{array}{r} +4.6 \\ 9.2 \end{array}$	$\begin{array}{r} 0.0 \\ +2.4 \\ 6.0 \end{array}$	$\begin{array}{r} -4.6 \\ 18.4 \end{array}$ 11.5
519		$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	$\begin{array}{r} -14.0 \\ 18 \\ 29.5 \end{array}$	8.5

-350

11.2

042.54.84

00

Areas. Cub. yds.

Exc. Emb. Exc. Emb.
574.3

322.98

Sta 516+60 to 518+05

178.3 Embk 1110.6 Cy.

319.13

made from cut so.

1942

263.43

329

180.63

130.9

1110.6 ✓

55.02

Sta. 518+05 to 519 Cy.

Exc. 1120 Cy. SR "

00 280.52

9.2 2039 Hauled n. free
into back up.

2480 86.48

31.1 47.9

42.44 17.04

29.3 11.0

36.64 12.65

Sta 518+05 to 519+05 "

9.0 39.2 Tail - Embk 1750 Cy. "

00 93.25

made from cut n.

78.6 ✓
S.G. 334
1120 570.9

268.9

Sta	Grade	L	C	R
519+25		$-\frac{84}{196}$	-11.8	$-\frac{241}{436}$ ^{RBogR} 7.0
+35	04254.84			
+40		$-\frac{9.8}{21.7}$	-4.7	$-\frac{9.8}{21.7}$
+47		$\frac{0.0}{8.0}$	-0.6	$-\frac{2.0}{10.0}$
+50		$+\frac{2.3}{8.6}$	+0.4	$\frac{10.0}{8.0}$
+75		$+\frac{9.2}{10.3}$	+7.6	$+\frac{7.2}{9.8}$
520	+2.00	$+\frac{12.6}{11.2}$	+10.0	$+\frac{8.2}{10.1}$
+30		$+\frac{12.7}{11.2}$	+9.8	$+\frac{7.8}{10.0}$
+70		$+\frac{11.0}{10.8}$	+8.3	$+\frac{5.0}{9.3}$
+90		$+\frac{5.6}{9.4}$	+2.6	$\frac{0.0}{8.0}$
521		$+\frac{6.7}{9.7}$	+3.0	$\frac{0.0}{8.0}$

Areas

Cub. yds.

300 R
7.0

Exc. Emb. Exc. Emb.
570.9

48768

182.9

170.59

237

00 12.40

0.5 0.5

778.0

12.52 00

S 20.1

715 Sta. 519+47 to 521+90 Fair

141.98

S 346

Exc. 1169.8 Cy.

153.6 Clear Slips L. R 2027 Cy.

189.70

S 543

Balance S. R 967.1 "

208.7 Haul 338.9 So free

185.88

S 564

" 124.71 "

246.9 " 300 yds. from 520+25 to

147.42

S 178

518+35 =

570. Cy.

713 280 yds. from 520+60 to

45.02

00

S

3.5

521+10 back up 300' = 840. "

18.2

Total Haul 1410. "

533.5

00

63.5 12.1

1020.9

110

1410

Sta	Grade.	L	C	R
521+50		$\frac{+3.8}{9.0}$	00	$\frac{-5.6}{15.4}$

+75		$\frac{+2.2}{8.6}$	$\frac{0.0}{1.0}$	$\frac{-4.7}{14.0}$
-----	--	--------------------	-------------------	---------------------

521+90		$\frac{0.0}{8.0}$	-2.8	$\frac{-8.8}{20.2}$
--------	--	-------------------	------	---------------------

522+35		$\frac{-1.5}{9.2}$	-4.0	$\frac{8.6}{19.9}$
--------	--	--------------------	------	--------------------

+55	+200	$\frac{-2.0}{10.0}$	-5.0	$\frac{-9.3}{21.0}$
-----	------	---------------------	------	---------------------

522+85		$\frac{0.0}{8.0}$	-1.3	$\frac{-3.3}{12.0}$
--------	--	-------------------	------	---------------------

523+15		$\frac{+2.0}{8.5}$	+0.9	$\frac{0.0}{8.0}$
--------	--	--------------------	------	-------------------

+75		$\frac{+5.0}{9.3}$	+4.8	$\frac{+4.2}{9.1}$
-----	--	--------------------	------	--------------------

+92		$\frac{+5.0}{9.2}$	+6.2	$\frac{+5.2}{9.3}$
-----	--	--------------------	------	--------------------

End Tail.

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
15.20	19.60	1020.9	12.1
		133	
		10.6	18.1
		2.7	
7.70	19.45		
		1.4	24.6
		1048.9	Emb. 357.1 Cy.
00	70.28	120.9	made from cuts
		1169.8	136.5
	93.55		
			78.0
	117.05		
			78.7
00	24.55		
		5.7	9.1
15.43	00	357.1	
		107.1	
80.96			
		56.4	Sta 522+85 to 523+92 Tail
98.15		169.2	Exc. 169.2 Cy. Solid Rock
			Handled 69.2 yds. So. free
			" 100. yds from 523+75
			to 522+40 = 135 Cy.

was

519+35 04254.84

Sta grade.

518+05 Go Ahead =

520+65 Back Up

520+35 04254.84

L C R

$\frac{-16.1}{31.1}$ -7.3 $\frac{-3.6}{12.4}$

$\frac{-23.0}{41.5}$ -9.6 $\frac{-5.6}{15.4}$

$\frac{-29.6}{51.4}$ -15.4 $\frac{-11.0}{23.5}$

$\frac{-22.0}{40.0}$ -19.0 $\frac{-10.0}{22.0}$

$\frac{-19.1}{35.6}$ -8.0 $\frac{-5.6}{15.4}$

$\frac{-10.2}{22.3}$ -5.3 $\frac{-2.1}{10.1}$

$\frac{0.0}{8.0}$ 0.0 $\frac{0.0}{8.0}$

$\frac{+9.3}{10.3}$ +11.4 $\frac{+13.8}{11.5}$

$\frac{+13.0}{11.3}$ +15.7 $\frac{+19.0}{12.9}$

$\frac{+15.8}{12.0}$ +18.6 $\frac{+21.1}{13.3}$

521

+15

+30

+55

+85

522

+40

+65

523

-53.3

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
	227.73		389.5
	373.22		Sta. 520+65 to 522 Backup
		303.3	Emb. 1815.0 Cy.
	718.83		1464.9 yds made from cut
		394.4	balance 350.1 yds made
	701.00		from measured fits
		459.0	208.2 yds. from Pit on
	290.45		L Sta 518+50 Class SR
		233.0	see page 76
	128.91		141.9 yds from Pit on
		35.8	L Sta. 522+40 Class SR
00	00	181.50	see Page 76
		5 32.7	Total Roman 350.1 Cy. SR
		160.5	
216.66		5 63.3	
		248.2	
319.57		5 117.5	
		455.3	
382.89		323.0	
		1400.0	

Sta	Grade.	L	C	R
523+25		$\begin{array}{r} +12.7 \\ \hline 11.2 \end{array}$	$+10.4$	$\begin{array}{r} +19.6 \\ \hline 12.9 \end{array}$
+50		$\begin{array}{r} +7.8 \\ \hline 10.0 \end{array}$	$+10.4$	$\begin{array}{r} +12.8 \\ \hline 11.2 \end{array}$
+90	-333	$\begin{array}{r} 00 \\ \hline 8.0 \end{array}$	$+1.3$	$\begin{array}{r} +2.8 \\ \hline 8.7 \end{array}$
524		$\begin{array}{r} -2.1 \\ \hline 10.1 \end{array}$	-1.0	$\begin{array}{r} 00 \\ \hline 8.0 \end{array}$
+45		$\begin{array}{r} -15.2 \\ \hline 29.8 \end{array}$	-8.6	$\begin{array}{r} -6.4 \\ \hline 16.6 \end{array}$
+67	0/240.45			
+70		$\begin{array}{r} -21.2 \\ \hline 38.8 \end{array}$	-21.4	$\begin{array}{r} -14.6 \\ \hline 28.9 \end{array}$
+85		$\begin{array}{r} -30.4 \\ \hline 52.6 \end{array}$	-16.1	$\begin{array}{r} -10.1 \\ \hline 22.1 \end{array}$
525	-294	$\begin{array}{r} -32.6 \\ \hline 55.9 \end{array}$	-13.3	$\begin{array}{r} -6.8 \\ \hline 17.2 \end{array}$
+25		$\begin{array}{r} 29.2 \\ \hline 50.8 \end{array}$	-11.7	$\begin{array}{r} -6.7 \\ \hline 17.0 \end{array}$
525+50		$\begin{array}{r} -14.6 \\ \hline 28.9 \end{array}$	-10.6	$\begin{array}{r} -6.8 \\ \hline 17.2 \end{array}$

Areas.

Cub. yds.

Exc	Emb.	Exc.	Emb
		1400.0	
314.77		\$ 103.9	
		234.9	Ma. 522 to 521 Backup
		\$ 56.8	
192.64		\$ 28.4	Exc. 2101.3 Cy.
		159.0	Class slip 1/2 Lo 2010 Cy.
22.05	00		Balance to R 1900.3 "
		2.7	2.0 Haul 2057 n. free
00	16.40	1985.7	" 1780. from 52290
		115.659	
		2101.3	242.9 to 524+90 = 3560 Cy.
275.12			
		520.7	
849.68			
		442.4	
743.09			
		379.7	
624.02			
		530.7	
522.28			
		389.6	
319.23			
		165.3	
		2673.3	

✓ 24.11

Sta	Grade.	L	R	R
525+75		$\begin{array}{r} -4.8 \\ 14.2 \end{array}$	-1.9	$\begin{array}{r} 0.0 \\ 8.0 \end{array}$
526		$\begin{array}{r} -1.4 \\ 9.1 \end{array}$	$\begin{array}{r} 0.0 \\ 4.0 \end{array}$	$\begin{array}{r} +3.9 \\ 9.0 \end{array}$
+25		$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	+2.3	$\begin{array}{r} +5.0 \\ 9.3 \end{array}$
526+75		$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	+2.4	$\begin{array}{r} +4.3 \\ 9.1 \end{array}$
527+25	-29.4	$\begin{array}{r} -0.7 \\ 8.0 \end{array}$	$\begin{array}{r} 0.0 \\ 6.0 \end{array}$	$\begin{array}{r} +3.9 \\ 9.0 \end{array}$
+45		$\begin{array}{r} -5.5 \\ 15.2 \end{array}$	-1.8	$\begin{array}{r} 0.0 \\ 8.0 \end{array}$
+60		$\begin{array}{r} -15.5 \\ 30.2 \end{array}$	-8.5	$\begin{array}{r} -3.8 \\ 12.7 \end{array}$
+85		$\begin{array}{r} -3.4 \\ 12.1 \end{array}$	-1.2	$\begin{array}{r} 0.0 \\ 8.0 \end{array}$
528		$\begin{array}{r} -1.5 \\ 9.2 \end{array}$	$\begin{array}{r} 0.0 \\ 3.0 \end{array}$	$\begin{array}{r} +2.5 \\ 8.6 \end{array}$
528+40		$\begin{array}{r} -1.8 \\ 9.7 \end{array}$	$\begin{array}{r} 0.0 \\ 2.0 \end{array}$	$\begin{array}{r} +1.9 \\ 8.5 \end{array}$

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
00	37.89		2673.3
			Sta. 523+90 to 526+25
		6.8	18.5 Emb. 2692.4 Cy.
22.10	210		2470.1 made from
		5 12	
		28.7	0.6 cuts - balance 222.3
39.90	00		2692.4
		5 13.7	made from measured
		36.0	Cuts
37.72	00		188.0 from Cut on L
		5 13.6	
		61.2	0.2 Sta 527+40 see Page 76
28.35	03.5		Class So R = 188.0 Cy.
		5 2.7	
		7.0	1.5.0 34.3 from Cut on R
00	40.13		170.9
			81.155
			252.0
			80.7 Class Lo R = 34.3 Cy.
	249.88		Haul 535
			126.8
00	239.6		Sta. 527+75 to 527+45
		2.5	7.5 Exc. 2520 Cy.
			Class Slip Lo R 312 Cy.
13.48	3.00		Balance So R 220.8 "
		17.2	5.6 Haul 90.9 yds n. free
			" 80. " 526+25 to
9.70	45.0		527+70 = 116. Cy.
		2.5	10.9
		22.1	246.7
		30.2	
		44.4	

Sta	Grade.	L.	C.	R.
528+60		$\begin{array}{r} -36 \\ 124 \end{array}$	-12	$\begin{array}{r} 00 \\ 80 \end{array}$
528+85		$\begin{array}{r} -95 \\ 212 \end{array}$	-7.0	$\begin{array}{r} -4.4 \\ 136 \end{array}$
529+10		$\begin{array}{r} -35 \\ 122 \end{array}$	-1.1	$\begin{array}{r} 00 \\ 80 \end{array}$
+25	-294	$\begin{array}{r} 00 \\ 8.0 \end{array}$	+16	$\begin{array}{r} +28 \\ 8.7 \end{array}$
+50		$\begin{array}{r} +2.9 \\ 8.7 \end{array}$	+4.3	$\begin{array}{r} +6.7 \\ 9.7 \end{array}$
+75		$\begin{array}{r} +2.8 \\ 8.7 \end{array}$	+4.0	$\begin{array}{r} +6.3 \\ 9.6 \end{array}$
+94.5	04224.94			
529+95		$\begin{array}{r} +5.1 \\ 9.3 \end{array}$	+3.1	$\begin{array}{r} +1.8 \\ 8.5 \end{array}$
530+30		$\begin{array}{r} +1.3 \\ 8.3 \end{array}$	+2.8	$\begin{array}{r} +4.4 \\ 9.1 \end{array}$
+65	-310	$\begin{array}{r} 00 \\ 8.0 \end{array}$	00	$\begin{array}{r} 00 \\ 8.0 \end{array}$
530+85		$\begin{array}{r} -2.3 \\ 10.5 \end{array}$	-4.4	$\begin{array}{r} -4.6 \\ 13.9 \end{array}$
531+04.5	04221.53			

Areas		Cub. Yds.	
Exc.	Emb.	Exc	Emb.
00	2484		246.7
			No. 526+75 to 529+25
			90.4 Embk 431.1 C.Y.
	170.45		made from cuts
		89.7	
.00	2336		
		45	43 No. 527+85 to 528+60
2456	00	431.1	Exc. 444 C.Y. So R
		47.5	Hauled alongside free
77.96			
		69.9	
73.00			No. 529+10 to 530+65
		47.5	Exc. 266.3 C.Y. Lo R
55.19			Haul 91.3 So. free
		66.3	" 75. " "
47.16			60. from 529+75 to 528+75 = 60.
		306.40	" 529+95 " 531+25 = 52.
00	00	266.3	Total Haul 112. C.Y.
		28.8	
77.83		55.2	
		84.0	

Sta	Grade.	L	C	R
531+0.5		$\frac{-7.3}{18.0}$	-3.0	$\frac{-14}{9.1}$
+25		$\frac{-4.4}{13.6}$	-1.8	$\frac{-0.5}{7.7}$
+50		$\frac{-3.7}{12.6}$	-2.0	$\frac{-1.2}{8.8}$
+75		$\frac{-7.0}{17.5}$	-3.6	$\frac{-2.0}{10.0}$
532	-278	$\frac{-13.0}{26.5}$	-6.0	$\frac{-4.0}{13.0}$
+20		$\frac{-13.6}{27.4}$	$\frac{-14.0}{18.0}$	$\frac{-8.5}{19.7}$
+35		$\frac{-7.6}{18.4}$	$\frac{-10.2}{11.0}$	$\frac{-7.2}{17.8}$
+50		$\frac{-2.8}{11.2}$	-3.1	$\frac{-3.0}{11.5}$
+65		$\frac{-1.4}{9.1}$	-0.6	$\frac{0.0}{8.0}$
532+75		$\frac{-0.8}{8.2}$	$\frac{0.0}{2.0}$	$\frac{+1.3}{8.3}$

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
	71.10	84.0	Stn. 530 to 533
		39.8	Emblk 814.5 Cy.
	36.32		136.6 yds. made from
		34.7	Cut L. Balance
	38.55		67.9 made from
		55.3	measured Pits
		78.6	from Pit on R Sta
	81.00	529+25	See Page 76
			Class L. R
		119.9	599.3 from Pit on R
			Sta 529+10 to 538+25
	178.00		See Page 77
			Class $\frac{1}{3}$ L. R = 399.3
		201.2	$\frac{1}{3}$ Earth = Total 6200 Cy.
			" L. R 477.9 "
	365.41		Haul on Borrowed
			Material = 1078 Cy.
		172.3	
	255.04		
		86.3	
	55.49		
		18.2	Stn. 532+65 to 534+45
06	10.03		Exc. 191.3 Cy. L. R
		0.9	2.2 Haul 46.3 yds. n. free
7.26	2.00	15.9	06 " 110. " from
		16.8	533+25 to 535
			= 192 Cy.

Sta	Grade.	L.	C.	R.
533		$\frac{00}{8.0}$	+2.0	$\frac{+2.6}{8.7}$

+50	-278	$\frac{+1.3}{8.3}$	+2.6	$\frac{+4.9}{9.2}$
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+85		$\frac{00}{8.0}$	+2.0	$\frac{+4.8}{8.2}$
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+87 04213.68

534		$\frac{-3.9}{12.8}$	-1.5	$\frac{00}{8.0}$
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+15		$\frac{-3.3}{12.0}$	$\frac{00}{2.0}$	+0.9 $\frac{+3.0}{8.8}$
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+45	-810	$\frac{-4.5}{13.7}$	-1.8	$\frac{00}{8.0}$
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534+98		$\frac{-4.3}{13.5}$	-2.0	$\frac{-1.1}{8.6}$
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RB09L

534+98 Back Up=		-20.4	20.0	-10.6	-3.4	-2.1		-1.1
538 Go Ahead 34.0		$\frac{64.6}{34.0}$	$\frac{34.0}{42.0}$	$\frac{27.0}{14.0}$	2.0	$\frac{8.6}{8.6}$		

535+23	$\frac{11.2}{27.5}$	$\frac{-1.8}{54.5}$	$\frac{-20.2}{43.0}$	$\frac{-20.0}{28.0}$	$\frac{-13.4}{20.0}$	$\frac{-7.0}{10.0}$	$\frac{-5.0}{6.1}$	$\frac{-1.1}{10.5}$
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+25

Box Culvert 2x2'9"x78' Double = 4692 BM

535+48	21.0	$\frac{-17.0}{46.5}$	$\frac{-19.6}{23.0}$	$\frac{-19.0}{3.0}$	-18.3	$\frac{-12.2}{25.3}$
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+49 04208.66

Areas Cub. yds.

Exc Emb. Exc Emb.

27.10

0.0

69.1

47.55

Sta 533+85 to 534+98

54.4 Emb. 1149 Cy made

36.40

0.0

from cut so

6.7

5.4

0.0

29.25

3.1

10.4

16.86

8.25

6.7

24.2 Sta 534+98 to 536+90

0.0

35.28

156.3

35.0 $\frac{1}{2}$ 50.

Emb. 3253.1 Cy.

191.3

74.9 2438.2 yds. made

41.00

✓

114.9

from cuts + Channel

on L See Page 79

267.50

and swell out toward
material - Balance

420.6 814.9 Cy from measuring

Pit on R Sta 537

See Page 76

Class borrow $\frac{1}{2}$ L & 407.4

727.0

" " $\frac{1}{2}$ S & 407.5

Haul on borrow
material 1630 Cy.

929.45

842.2

1989.8

1
6

5.0
1.5

92 BM

Sta	Grade.	L	C	R	
535+75	RB on L 14.0	$\frac{-17.0}{39.5}$	$\frac{-19.4}{30.0}$	$\frac{-19.4}{18.0}$ $\frac{-15.0}{6.0}$ -17.8	$\frac{-11.8}{24.7}$

536	10.5	$\frac{-17.1}{36.0}$	$\frac{-18.6}{24.0}$	$\frac{-13.6}{8.0}$ -16.4	$\frac{-10.6}{10.0}$ $\frac{-10.2}{22.3}$
-----	------	----------------------	----------------------	------------------------------	--

+20	8.0	$\frac{-17.6}{34.4}$	$\frac{-14.5}{14.0}$	-9.0	$\frac{-9.4}{21.1}$
-----	-----	----------------------	----------------------	------	---------------------

+35	7.0	$\frac{-17.0}{33.0}$	$\frac{-13.0}{12.0}$	$\frac{-6.6}{8.0}$ -3.0	$\frac{0.0}{8.0}$
-----	-----	----------------------	----------------------	----------------------------	-------------------

+49 04208.66

+50		$\frac{-14.4}{28.6}$	$\frac{-12.9}{15.0}$	$\frac{0.0}{2.5}$ +2.2	$\frac{+6.7}{9.7}$
-----	--	----------------------	----------------------	---------------------------	--------------------

+60		$\frac{0.0}{8.0}$	+5.0	$\frac{+10.0}{10.5}$
-----	--	-------------------	------	----------------------

+75	+25.0	$\frac{-11.5}{24.2}$	$\frac{0.0}{5.0}$	+2.8	$\frac{+10.6}{10.7}$
-----	-------	----------------------	-------------------	------	----------------------

536+90		$\frac{0.0}{8.0}$	+5.8	$\frac{+12.8}{11.2}$
--------	--	-------------------	------	----------------------

537+25		$\frac{+5.8}{9.5}$	+13.1	$\frac{+16.9}{12.3}$
--------	--	--------------------	-------	----------------------

537+50		$\frac{+12.1}{11.0}$	+15.8	$\frac{+17.3}{12.4}$
--------	--	----------------------	-------	----------------------

Areas.

Cub. yds.

Exc. Emb. Exc. Emb.
1989.8

754.88

633.9

614.42

371.1

387.45

158.6

00 183.60

7.4 81.8

40.22 110.75

23.4 13.7

86.25 00

41.8 2.1

64.38 11.50

47.6 2.1

106.88 00

3253.1

5 68.1
220.7

133.59

5 82.4
248.2

302.56

236.5
976.1

Sta	Grade.	L	C	R
537+78		$\frac{00}{8.0}$	+9.0	$\frac{+15.9}{12.0}$

538		$\frac{-6.2}{16.3}$	00	$\frac{+9.6}{10.4}$
-----	--	---------------------	----	---------------------

+45		$\frac{-4.6}{13.9}$	-3.1 $\frac{00}{5.0}$	$\frac{+1.0}{8.3}$
-----	--	---------------------	-----------------------	--------------------

539	+25.0	$\frac{-4.2}{13.3}$	-0.4 $\frac{00}{2.0}$	$\frac{+2.0}{8.5}$
-----	-------	---------------------	-----------------------	--------------------

+50		$\frac{00}{8.0}$	+2.4	$\frac{+5.0}{9.3}$
-----	--	------------------	------	--------------------

540		$\frac{+2.8}{8.7}$	+6.5	$\frac{+11.0}{10.8}$
-----	--	--------------------	------	----------------------

○ 4215.82

End Tail

Areas		Cub. yds.		
Exc.	Emb.	Exc.	Emb.	
153.60	00	976.1	52.5	Sta. 536+35 to 540 Tail
		78.2	5.9	Exp. 1525.2 Cy.
		18.4		
38.40	21.70	14.2		Class material in
		33.2	55.9	regular sections
				30% L.A. 340.6 Cy.
150	45.40			Slips L.A. 235.6 "
				Balance cut L.A.
		7.6	64.3	Total L.A. 1576.2 Cy.
				" L.A. 1949.0 "
6.00	17.76			Stake 241. So free
		43.3	11.0	" 110. Opposite free
				" 1020 from 537+50
40.76	1.00	137.1		to 535+85 = 1683 Cy.
		147.5		Sta 537+78 to 539+50
118.58		1371.0		Cut 1371 Cy. made
	50.	154.2		from cut
		1525.2		

✓

10M

vgn

537+49 0420866
Sta Grade.
534+98 Back Up =
538 Go Ahead

2	0.	12
$\frac{-2.1}{10.2}$	$\frac{-10.6-20.0}{15.0}$	$\frac{-20.4}{27.0}$
		376

538 +25	$\frac{0.0}{8.0}$	00	$\frac{-1.2}{8.8}$
---------	-------------------	----	--------------------

+50	$\frac{-1.5}{9.2}$	-1.8	$\frac{-1.5}{9.2}$
-----	--------------------	------	--------------------

+75	$\frac{-3.0}{11.5}$	-4.6	$\frac{-6.0}{16.0}$
-----	---------------------	------	---------------------

539	$\frac{-2.5}{10.8}$	-4.5	$\frac{-7.2}{17.8}$
-----	---------------------	------	---------------------

+50	$\frac{-3.8}{12.7}$	-5.8	$\frac{-12.5}{25.7}$
-----	---------------------	------	----------------------

539+72	$\frac{-2.0}{10.0}$	-3.4	$\frac{-5.0}{14.5}$
--------	---------------------	------	---------------------

540+10	$\frac{-2.1}{10.2}$	-3.0	$\frac{-3.8}{12.7}$
--------	---------------------	------	---------------------

+40	$\frac{0.0}{8.0}$	-1.6	$\frac{-3.2}{11.8}$
-----	-------------------	------	---------------------

540+60	$\frac{+1.1}{8.3}$	$\frac{0.0}{2.0}$	$\frac{-3.7}{11.0}$
--------	--------------------	-------------------	---------------------

Areas.

Cub. Yds.

Exc. Emb. Exc. Emb.

204
376

215.29

1016 Sta. 538 to 542+90

420

Embk 2323.0 Cy.

1471000.0 Yds made from

2706

cut H. + swell on

56.4

Toward mat-

94.75

erial-Balance

89.4

1323.0 made

98.30

from measured
Pto

247.0

Pit on L 538+75
to 540+70 = 463.9

168.41

See Page Class 1/3 E = 184.6
" 1/3 L.R. = 389.395.6 Pit on L 541+50 = 213.3
Class 1/3 E 71.1 Cy.

66.15

" 1/3 L.R. 147.2

See Page 77

85.2 Pit on L 543 = 640.8 R

Class 1/2 E = 322.9

55.00

" 1/2 L.R. = 322.9

Total La Borrow = 48.6 Cy.

45.6 " L.R. " = 774.4

Haul on Borrowed
material 970 Cy.

00

270

0.8

14.5

Sta 540+40 to 540+80

3.30

12.05

0.8

9.5

Exc. 1/6 Cy. S.P.

1.6

759.5

Sta	Grade.	L	C	R
540+80		$\frac{00}{8.0}$	-0.4	$\frac{-2.8}{11.2}$
541		$\frac{-3.2}{11.8}$	-2.8	$\frac{-5.7}{15.5}$
+25		$\frac{-8.1}{19.2}$	-7.7	$\frac{-13.0}{26.5}$
+50		$\frac{-8.0}{19.0}$	-11.8	$\frac{-13.7}{15.0}$ $\frac{-15.2}{29.8}$
541+80		$\frac{-4.9}{14.4}$	-9.2	$\frac{-14.3}{13.0}$ $\frac{-16.2}{31.3}$
542+10		$\frac{-5.8}{15.7}$	-8.2	$\frac{-12.4}{11.0}$ $\frac{-14.7}{29.1}$
+40		$\frac{-1.3}{9.0}$	-3.8	$\frac{-14.0}{22.0}$ $\frac{-15.2}{29.8}$
+60		$\frac{00}{8.0}$	-2.5	$\frac{-12.8}{26.2}$
+79	04191.00			
+80		$\frac{+4.4}{9.1}$ $\frac{00}{2.0}$	-0.9	$\frac{-5.7}{15.5}$
542+90		$\frac{+6.7}{9.7}$	+2.0	$\frac{00}{8.0}$

-350

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
00	1364		759.5
			30.7
	69.37		147.7
	249.79		287.8
	371.93		383.5
	318.38		332.9
	280.79		243.8
	168.05		91.0
00	87.55	0.9	
		3.3	42.7
13.20	27.82	0.4	
		10.7	3.4
44.50	.00	20.6	2313.04
		35.9	✓

PM

✓ 44

Sta	Grade.	L	C	R
543		$\frac{+6.7}{9.7}$	+3.8	$\frac{+1.4}{8.4}$
+30		$\frac{+8.4}{10.1}$	+6.3	$\frac{+5.5}{9.4}$
+50		$\frac{+7.2}{9.8}$	+6.3	$\frac{+5.3}{9.3}$
+60		$\frac{+3.3}{8.8}$	+1.9	$\frac{+1.8}{8.5}$
544	-3.34	$\frac{+11.6}{10.9}$	+9.7	$\frac{+7.8}{10.0}$
+25		$\frac{+13.6}{11.4}$	+12.4	$\frac{+11.3}{10.8}$
+50		$\frac{+13.7}{11.4}$	+12.8	$\frac{+12.0}{11.0}$
545		$\frac{+7.7}{9.9}$	+6.5	$\frac{+7.6}{9.9}$
+40		$\frac{0.0}{8.0}$	+0.3	$\frac{+0.6}{8.2}$
545+45		$\frac{-0.8}{8.2}$	-0.5	$\frac{0.0}{8.0}$

Areas.

Cub. yds.

Exc. Emb. Exc. Emb.

			35.9	
66.79	S		0.1	
			102.1	
	S		3.6	
117.02	S		6.8	Ma. 542+60 to 545+45
			84.1	Exc. 1507.8 Cy.
				Class material in regular
110.16	S		32	sections 1/2 Lo R = 632.7 Cy.
				Class Slips Lo R = 1125.4 "
			272	Balance out Lo R.
				Total Lo R = 758.1 Cy.
36.83	S		18.0	" Lo R = 749.7 "
			159.9	Haul 155 yds. So. free
				" 175.8 " " "
178.97	S		16.4	" 370. from 543+80 to 542+05
				= 1648. Cy.
			192.7	690 yds. " 544+50
				to 547+30 = 1932.1 "
237.24	S		19.6	Total Haul 12580.1 "
			223.8	
246.14	S		42.2	
			344.1	
125.55	S		14.2	
			96.6	
4.83		00		
			0.3	0.4
			1390.8	
00	6.85		117.0	356.
			1507.8	193.7
				194.1

102

V

Sta	Grade.	L	C	R
546		$\frac{-5.0}{14.5}$	-8.0	$\frac{-8.4}{19.6}$

+30		$\frac{0.0}{8.0}$	-3.4	$\frac{-11.0}{23.5}$
31.5	04179.23			

+70		$\frac{+1.0}{8.3}$	$\frac{0.0}{5.0}$	$\frac{-8.4}{19.6}$
-----	--	--------------------	-------------------	---------------------

+90		$\frac{0.0}{8.0}$	-2.2	$\frac{-8.6}{19.9}$
-----	--	-------------------	------	---------------------

547		$\frac{-2.4}{10.6}$	-3.8	$\frac{-10.5}{22.7}$
-----	--	---------------------	------	----------------------

+30	-350	$\frac{-3.5}{12.2}$	-3.4	$\frac{-4.0}{9.0}$	$\frac{-8.5}{19.7}$
-----	------	---------------------	------	--------------------	---------------------

+50		$\frac{-6.4}{16.6}$	-8.0	$\frac{-10.0}{22.0}$
-----	--	---------------------	------	----------------------

+70		$\frac{-6.7}{17.0}$	-9.1	$\frac{-13.6}{27.4}$
-----	--	---------------------	------	----------------------

548		$\frac{0.0}{8.0}$	-1.0	$\frac{-2.0}{10.0}$
-----	--	-------------------	------	---------------------

548+10		$\frac{+1.8}{8.5}$	+0.8	$\frac{0.0}{8.0}$
--------	--	--------------------	------	-------------------

Areas.		Cu. Yds.	
Exc.	Emb.	Exc.	Emb.
	183.30		194.1
		153.0	Sta 546+30 to 546+90
00	92.05		Exc. 11 Cy. S.R.
		0.7	113.7
150	61.38		
		0.4	45.2
00	60.79	1.1	
			31.3
	108.42		
		104.2	
	79.19		Sta 545+40 to 548+10
			Emth 1091.5 Cy.
		107.8	made from cut 20.
	211.80		
		179.6	
	273.07		
		160.6	
00	16.00		
		1.7	Sta 548 to 548+80
		2.0	Exc 55.7 Cy. S.R.
			Hauled m. free
13.80	00	7.8	1091.5
		9.5	

Sta	Grade.	L	C.	R
548+20		$\frac{+2.8}{8.7}$	+1.7	$\frac{+0.7}{8.2}$
+65		$\frac{+0.9}{8.2}$	00	$\frac{0.0}{8.0}$
+79	04170.57			
+80		$\frac{0.0}{8.0}$	-0.6	$\frac{-1.5}{9.3}$
549		$\frac{-2.1}{10.2}$	-3.3	$\frac{-4.5}{13.8}$
+15		$\frac{0.0}{8.0}$	-0.7	$\frac{-2.4}{10.6}$
+25	-32.6	$\frac{+2.6}{8.7}$	+1.0	$\frac{0.0}{8.0}$
+50		$\frac{+6.4}{9.6}$	+5.2	$\frac{+4.2}{9.1}$
+75		$\frac{+8.2}{10.1}$	+6.7	$\frac{+5.0}{9.3}$
550		$\frac{+7.7}{9.9}$	+6.3	$\frac{+4.4}{9.1}$
550+25		$\frac{+7.1}{9.8}$	+4.7	$\frac{+3.4}{8.9}$

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
28.37		9.5	
		26.6 Sta 548+65 to 549+25 Emb'd	
3.60	00	524 Cy. made from cut so.	
		0.7	1.9
00	10.44	36.8	
		18.9 = 1/2 56.	
		55.7	27.1
	6270		
			216
00	1491		
		2.3	1.8
1875	00	52.4	
		50.8	
91.02		Sta. 549+15 to 551+24	
		96.7 Exc. 605.4 Cy. So R	
117.79		Haul 74.5 yds. M. free	
		104.6 " 420 " from 549+90	
108.25		To 552+35 = 1029 Cy.	
		89.9	
85.94		138.1	
		482.4	

Wm
✓

Sta	Grade.	L	P	R
550+90		$\frac{+3.0}{8.8}$	+2.0	$\frac{.0}{8.0}$
551+24		$\frac{.0}{8.0}$	-3.1	$\frac{-7.9}{18.9}$
+55		$\frac{.0}{8.0}$	-1.5	$\frac{-5.3}{14.9}$
551+75	-3.26	$\frac{-1.4}{9.1}$	-2.2	$\frac{-4.6}{13.9}$
552+15		$\frac{-4.5}{13.8}$	-7.6	$\frac{-10.0}{22.0}$
+30		$\frac{-4.5}{13.7}$	-6.2	$\frac{-9.9}{21.9}$
+32.3	0415705			
+65		$\frac{-12.0}{25.0}$	-14.6	$\frac{-16.7}{32.0}$
+70		Box Culvert 2x2 1/2 x 56' = 1815 BM		
+90		$\frac{-7.4}{18.1}$	-10.0	$\frac{-14.7}{29.0}$
553	-3.50	$\frac{-9.3}{21.0}$	$\frac{-9.5}{17.0}$	$\frac{-6.8}{10.} -7.8$ $\frac{-11.3}{23.9}$
553+25		$\frac{-8.7}{20.0}$	-13.6	$\frac{-14.9}{29.4}$

Areas.

Cub. Yds.

72

Exc. Emb. Exc. Emb.

2880 00

482.4

00

69.35

121

494.5

110.950

605.4

29.1

60.3

357.3

Sta 55+90 to 55+65

30.4 Emb'th 2372.0 Cy.

46.30

1958.7 Cy. made from

172.7 cut + swell on

186.79

borrowed mater-

96.5'ial + ditch on L 55+4

160.76

Balance 413.3 Cy.

Borrowed

438.9 from measured

516.55

Cut on L 54+15 to

383.9 55+24 - See Page 78

312.85

Class A R 413.3 Cy.

101.5 Haul on borrowed

235.31

material 826 Cy.

302.7

418.52

299.8

1915.8

534

Sta	Grade.	L	C	R
553+50	-3.50	$\frac{-44}{136}$	-81	$\frac{-136}{274}$
+65		$\frac{-41}{131}$	-58	$\frac{-95}{212}$
+68	04154.30			
554	-3.16	$\frac{-45}{137}$	-63	$\frac{-85}{197}$
+24	04152.53			
+50		$\frac{00}{8.0}$	-1.0	$\frac{-23}{104}$
+65		$\frac{+2.0}{8.5}$	+0.8	$\frac{00}{80}$
555	-2.86	$\frac{+7.7}{99}$	+62	$\frac{+49}{92}$
+25		$\frac{+10.3}{106}$	+83	$\frac{+65}{96}$
+75		$\frac{+126}{111}$	+108	$\frac{+74}{99}$
556		$\frac{+11.9}{11.0}$	+84	$\frac{+55}{94}$
556+45		$\frac{+5.0}{9.3}$	+21	$\frac{00}{8.0}$

Areas.		Cub. Yds.	
Exc.	Emb.	Exc	Emb.
	229.05		1915.8
			104.5
	147.07		193.0
	150.71		155.5
00	172.5		
		27	32
146.0	00		237.20
		slip	8.8
			80.5
109.61			Sta. 554+50 to 557+67
	S. 27.1		120.7 Exc. 1067.9 Cy.
151.03			Class Slips L.R. 104.8 Cy.
	S. 45.3		318.9 Balance Out L.R. 963.1
193.40			S. 4.2 Haul 96. Cy. So free
			161.4 " 526 " 71
			" 420 from 555+35 to 553+50 = 777.2 Cy.
155.28			S. 5.2 430 yds from 555+90
			161.2 to 558+15 = 967.2
			Total Haul 1744.2
38.17	0.0 S. 11.9		
			25.1
			973.01

WMM

YAD

Sta	Grade.	L	C	R
556 + 80		$\begin{array}{r} +0.8 \\ 8.2 \end{array}$	$\begin{array}{r} 0.0 \\ 6.6 \end{array}$	$\begin{array}{r} -8.7 \\ 2.1 \end{array}$

557 + 067 04144.45

557 + 25		$\begin{array}{r} +3.4 \\ 8.8 \end{array}$	0.0	$\begin{array}{r} -4.4 \\ 1.36 \end{array}$
----------	--	--	-----	---

-3.16

+60

$\begin{array}{r} +1.8 \\ 8.4 \end{array}$	$\begin{array}{r} 0.0 \\ 4.0 \end{array}$	-1.5	$\begin{array}{r} -12.1 \\ 2.51 \end{array}$
--	---	------	--

+62.7 04142.68

+67

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	-3.1	$\begin{array}{r} -12.4 \\ 2.56 \end{array}$
---	------	--

557 + 90

$\begin{array}{r} -1.9 \\ 10.0 \end{array}$	-6.0	$\begin{array}{r} -26.7 \\ 47.1 \end{array}$
---	------	--

-3.50

558 + 05

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	-4.1	$\begin{array}{r} -26.7 \\ 47.1 \end{array}$
---	------	--

+15 04140.85

+40

$\begin{array}{r} +5.3 \\ 9.3 \end{array}$	+12	$\begin{array}{r} 0.0 \\ 2.5 \end{array}$	$\begin{array}{r} -5.0 \\ 1.44 \end{array}$
--	-----	---	---

-3.16

+70

$\begin{array}{r} +5.2 \\ 9.3 \end{array}$	+2.0	$\begin{array}{r} 0.0 \\ 5.0 \end{array}$	$\begin{array}{r} -3.0 \\ 11.5 \end{array}$
--	------	---	---

+71 04139.08

559

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	-16	$\begin{array}{r} -7.2 \\ 17.8 \end{array}$
---	-----	---

-2.86

559 + 30

$\begin{array}{r} -7.4 \\ 18.1 \end{array}$	-12.8	$\begin{array}{r} -19.3 \\ 36.0 \end{array}$
---	-------	--

Areas.		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
		973.0	247
0.56	57.15		
		23	
		11.8	60.5
136.0	154.0		
		112	516
36.0	64.18		
		0.3	20.7
		998.6	Emb'd 390.5 Cy.
00	95.48	69.3	3038.8 Cy. made from
		10.67.9	156.3 cu. + swell on
	271.40		borrowed material
			132.7 Balance 866.7 Cy. made
00	206.40		from measured cut
		122	141.1 on L 558 See Page 78
2827	11.25		Class borrow S. R.
		35.2	79 = 866.7 Cy.
35.10	3.00		
		13.0	27.1
		60.4	
00	45.84	27.1	56.
		87.5	
			269.7 Exc. 87.5 Cy. to R
			Hauled opposite free
439.69			
		9272	
		1819.5	

Sta	Grade.	L	C	R
559+60		$\begin{array}{r} -17.7 \\ 33.6 \end{array}$	$\begin{array}{r} -29.6 \\ 24.0 \end{array}$	$\begin{array}{r} -26.8 \\ 41.0 \end{array}$
				$\begin{array}{r} -27.6 \\ 48.4 \end{array}$
+80	-2.86	$\begin{array}{r} -11.4 \\ 24.1 \end{array}$	$\begin{array}{r} -27.1 \\ 28.0 \end{array}$	$\begin{array}{r} -32.0 \\ 40.0 \end{array}$
+80				$\begin{array}{r} -42.5 \\ 70.5 \end{array}$
		Box Culvert $1 \times 1\frac{1}{2} \times 86' = 1680 \text{ BM}$		
560		$\begin{array}{r} -7.2 \\ 17.8 \end{array}$	$\begin{array}{r} -17.4 \\ 13.0 \end{array}$	$\begin{array}{r} -30.0 \\ 52.6 \end{array}$
+22.5	4134.75			
+25	-3.16	$\begin{array}{r} -5.1 \\ 14.7 \end{array}$	$\begin{array}{r} -8.1 \end{array}$	$\begin{array}{r} -18.0 \\ 34.0 \end{array}$
+55		$\begin{array}{r} 0.0 \\ 8.0 \end{array}$	$\begin{array}{r} -2.5 \end{array}$	$\begin{array}{r} -10.3 \\ 22.5 \end{array}$
+78.5	4132.98			
+90		$\begin{array}{r} +6.6 \\ 9.7 \end{array}$	$\begin{array}{r} +3.1 \end{array}$	$\begin{array}{r} 0.0 \\ 8.0 \end{array}$
561	-3.50	$\begin{array}{r} +8.2 \\ 10.1 \end{array}$	$\begin{array}{r} +4.3 \end{array}$	$\begin{array}{r} +1.5 \\ 8.4 \end{array}$
563+384	4123.88			

Add to Loose Rock Excavation for Slips
removed after Cuts were remeasured

515 to 516+75	43.0 Cuts
519+47 to 521+90	50.0 " "
542+60 to 545+45	24.0 " "
554+50 to 557+67	29.0 " "
Total	144.0 " "

Areas

Cub. yds.

Exc.

Emb.

Exc.

Emb.

-27.6
48.4

1229.23

1819.5

843.2

42.5
70.8

1047.37

3.4

609.4

4
6

597.98

Sta. 560+55 to 561

405.6 Exc. 56.0 Cy. 20R

278.09

Hauled & free

1957

00

74.18

23.3 32.1

538.4

00

3905.5

✓

24.5

47.8

82.5

78.58

56.0

65

✓ 100

Borrow Pit on Left 518+05 to 519
Center Line of Pit = Center of Line

S/L	L	C	Areas	C. Yds.
518+05		00 80	0.0	32.4
+35	(+9.2) 25.0	00 130 9.2	58.28	31.5
+45	(+11.0) 27.0	00 210 9.2	111.94	55.8
+60	(+11.6) 27.0	+18 00 190 120 9.2	88.94	60.7
+80	(+8.0) 26.0	+25 00 220 120 9.2	75.10	27.8
519		00 80	0.0	208.25

figures in ring show
original surface

Hauled from into fill 520+65 to 522

Borrow Pit on Left 522 to 522+80

S/L	L	R	Areas	C. Yds.
522+0		00 80	0.0	76.2
+40	00 40.3	+40 +9.0 283 10.3 80	154.40	101.9
+55	00 45.0	+15 +3.4 +8.4 +12.0 430 35.0 18.4 11.0 80	212.52	114.6
+70	00 40.4	+20 +5.2 +9.4 +13.4 33.4 29.4 17.4 14.4 80	200.18	37.2
+80	00	00 80	0.0	329.9

Haul 141.9 to fill 520+65 to 522 from

" 188 from 522+65 to 525+50 = 535 Yds. Haul.

329.9

Borrow Pit on R 525+90
 525+75 C R Areas Cu.Yds.
 = 0 8.0 0.0

Yds.	+25	8.0	$\frac{0.0}{8.0}$	$\frac{+3.1}{9.0}$	$\frac{+5.2}{20.0}$	$\frac{0.0}{24.0}$	62.40	19.3
	+31	8.0	$\frac{0.0}{8.0}$	$\frac{+4.0}{9.0}$	$\frac{+5.0}{15.0}$	$\frac{0.0}{21.0}$	44.00	11.8
	+35	0.0					0.0	3.2
								<u>34.3</u> ✓ OK

Borrow Pit on R 529+25

529+10=0	0.0	0.0	0.0					
+02	8.0	$\frac{0.0}{8.0}$	$\frac{+2.0}{8.5}$	$\frac{+4.2}{28.0}$	$\frac{+3.9}{34.0}$	$\frac{0.0}{40.0}$	98.90	3.7
+18	8.0	$\frac{0.0}{8.0}$	$\frac{+3.0}{8.8}$	$\frac{+4.4}{27.0}$	$\frac{+3.5}{34.0}$	$\frac{0.0}{43.0}$	111.94	62.5
+24	0.0						0.0	12.4
								<u>78.6</u> ✓ OK

Haul 78.6 from 529+25 to 532+30 = 240 yds Haul ✓

Borrow Pit on R 537

536+35	8.0	0.0	0.0					16.3
+43	8.0	$\frac{0.0}{8.0}$	$\frac{+3.3}{8.8}$	$\frac{+5.7}{20.0}$	$\frac{+3.0}{31.0}$	$\frac{0.0}{38.0}$	110.07	16.2
+65	8.0	$\frac{0.0}{8.0}$	$\frac{+10.2}{10.1}$	$\frac{+11.2}{22.0}$	$\frac{+6.8}{35.0}$	$\frac{0.0}{44.0}$	285.64	113.7
+75	8.0	$\frac{0.0}{8.0}$	$\frac{+10.6}{10.7}$	$\frac{+13.4}{22.7}$	$\frac{+12.2}{31.8}$	$\frac{0.0}{40.6}$	328.47	273.6
+97	8.0	$\frac{0.0}{8.0}$	$\frac{+13.0}{11.3}$	$\frac{+16.2}{21.3}$	$\frac{+18.8}{29.2}$	$\frac{0.0}{36.4}$	343.18	154.3
537+10	8.0	$\frac{0.0}{8.0}$	$\frac{+14.8}{11.7}$	$\frac{+14.5}{25.2}$	$\frac{0.0}{34.8}$		297.71	95.8
+23	8.0	$\frac{0.0}{8.0}$	$\frac{+16.8}{12.2}$	$\frac{+11.0}{13.4}$	$\frac{0.0}{22.2}$		100.36	814.9 ✓

Haul allowed from 537+50 to 535+50
 = 1630 yds Haul 100 ✓ OK

Borrow Pit on R 529+10 to 531+25						
Sta	L	C	R	Areas	Cu. Yds.	
0	$\frac{0.0}{30.}$	0.0	$\frac{0.0}{N.}$	0.0	20.8	
+15	$\frac{0.0}{35.}$	$\frac{+06}{30.}$	$\frac{+01}{N.}$	0.0	7.50	23.3
+30	$\frac{0.0}{35.}$	$\frac{+12}{30.}$	$\frac{+33}{15.}$	0.0	76.50	52.5
+45	$\frac{0.0}{35.}$	$\frac{+25}{30.}$	$\frac{+27}{15.}$	$\frac{+30}{5.}$	112.50	63.9
+60	$\frac{0.0}{35.}$	$\frac{+39}{30.}$	$\frac{+31}{15.}$	$\frac{+22}{10.}$	117.50	64.4
+75	$\frac{0.0}{35.}$	$\frac{+37}{30.}$	$\frac{+41}{15.}$	$\frac{+16}{5.}$	114.50	59.2
+90	$\frac{0.0}{35.}$	$\frac{+38}{30.}$	$\frac{+35}{15.}$	$\frac{+08}{5.}$	98.50	60.0
+105	$\frac{0.0}{40.}$	$\frac{+46}{30.}$	$\frac{+40}{15.}$	0.0	117.50	68.4
+120	$\frac{0.0}{40.}$	$\frac{+49}{30.}$	$\frac{+42}{15.}$	$\frac{+03}{15.}$	128.75	67.6
+135	$\frac{0.0}{40.}$	$\frac{+32}{30.}$	$\frac{+33}{15.}$	$\frac{+07}{15.}$	$\frac{+07}{30.}$	114.50
+150	$\frac{0.0}{20.}$	$\frac{+06}{15.}$	$\frac{+12}{15.}$	$\frac{+04}{30.}$	41.50	29.6
+165	$\frac{0.0}{10.}$	$\frac{+12}{15.}$	$\frac{+20}{15.}$	$\frac{+20}{30.}$	65.00	29.4
+180		0.0	$\frac{0.0}{10.}$	$\frac{+16}{15.}$	$\frac{+14}{35.}$	41.00
+195			$\frac{0.0}{25.}$	$\frac{+10}{35.}$	$\frac{0.0}{45.}$	10.00
+210		0.0	$\frac{0.0}{25.}$	0.0	599.3	28

Have 599 yds 140' = 838. ✓

BOTTOM Pit on L 541+50

$1.2 \times 40.0 \times 120.0 = 213.3$ Cu. Yds.

Borrow Pit on L 538+75 to 540+70					Areas Cu. Yds.	
Sta	C		R			
538+75=0	0.0		0.0	0.0		20.4
		+0.7 +1.8 +1.2 +1.2	0.0			
+20	0.0	2.0 16.0 23.0 44.0	46.0	55.10		96.3
		+1.2 +2.2 +2.0 +1.4 +1.0	0.0			
+60	0.0	1.0 12.0 24.0 30.0 44.0	48.0	74.90		186.9
		+1.0 +2.8 +0.8 +1.4	0.0			
+25	0.0	1.0 22.0 38.0 45.0	50.0	80.40		67.3
		+0.6 +2.2 +1.4 +1.4	0.0			
+50	0.0	1.0 20.0 30.0 40.0	50.0	64.90		65.0
		+1.6 +2.2 +2.0	0.0			
+75	0.0	2.0 15.0 37.0	40.0	75.50		28.0
+95	0.0		0.0	0.0		463.9 ✓

Borrow Pit on L 543					Areas Cu. Yds.	
	L	C	R			
0	0.0	0.0	0.0	0.0		53.9
	3.0		1.5			
+15	0.0 +2.9 +5.0		0.0			
	3.5 3.0 1.5	+6.0	1.5	194.00		96.5
+30	0.0 +2.3 +3.4		0.0			
	3.5 3.0 1.5	+5.3	1.5	153.50		88.3
+45	0.0 +2.2 +4.7		0.0			
	3.5 3.0 1.5	+4.8	1.5	164.50		93.2
+60	0.0 +2.4 +4.4		0.0			
	3.5 3.0 1.5	+5.4	1.5	171.00		94.7
+75	0.0 +2.3 +4.2		0.0			
	3.5 3.0 1.5	+5.6	1.5	170.00		96.7
+90	0.0 +2.5 +4.7		0.0			
	3.5 3.0 1.5	+5.5	1.5	178.00		81.0
+105	0.0 +1.3 +3.3		0.0			
	3.5 3.0 1.5	+3.4	1.5	113.50		35.3
+20	0.0 +0.5		0.0			
	3.0 1.5	+0.4	1.5	13.50		5.0
+35	0.0 0.0	+0.3	0.0			
	3.0 1.5		1.5	4.50		1.2
+50	0.0	0.0	0.0	0.0		645.8 ✓
	1.5					

Have 645 Cu. 150' = 970 ✓

Borrow Pit in Extra width of Cut 544+25 to 551+25				Area C. Yds.	
Sta	L	C	R		
549+25		00		0.0	18.5
		80			
+50		00	42 +02 28	40.00	37.9
		80	91 19.1 21.0		
+75		00	450 +11 +15 +30	41.97	34.3
		80	93 94 196 262		
550		00	444 +10 +08	32.08	33.7
		80	91 196 244		
+25		+86 +46 +71 00 00 +30 00 +08		40.73	
		150 100 98 90 80 89 170 240			
+90		+35 00 00 00		7.90	58.5
		142 98 80 80			
551+25		00		0.0	5.0
		80			

Borrow Pit on L 544+15 to 550+15				Area C. Yds.	
Sta	L	C	R		
549+15		00		0.0	2.7
+20		00 +13 +32 00		29.23	7.9
		80 83 163 237			
+25		00 +26 +48 00		51.24	27.5
		80 86 184 264			
+35		00 +44 +63 00		92.53	104.0
		80 91 230 280			
+65		00 +64 +57 +67 00		94.42	27.8
		80 96 186 226 256			
+75		00 +71 +72 00		55.82	27.3
		80 98 148 186			
+90		00 +82 +92 00		42.62	28.2
		80 101 120 158			
550+15		00 +77 00		18.33	413.3
		80 99 128			

Have 413 from 550+55 to 552+55 = 82.6

Stations	Borrow Pit on L 558 Widened Cut.				Areas	Cu. Yds.
	L			C		
557+75	(+258) 580			(00) 8.0	0.0	20.5
+95	(+258) 580	+204 530	+14 160	00 120	(00) 120	55.40
558+10	(+258) 530	+170 460	+110 310	+66 210	+10 170	103.96
+30	(+258) 510	+170 440	+100 300	+20 210	00 160	190.14
+60	(+258) 520	+210 520	+30 450	+66 310	+50 220	287.75
+90	(+258) 530	+100 430	+44 250	00 210	(+18) 84	205.02
559+05	(+144) 620	+98 470	+60 380	00 200	(00) 110	60.60
+10	(+94) 60.0			(00) 10.	0.0	770.4

Add to above B.P. taken out Later

0			0.0	00	10.0
+10	(+60) 190	0.0 180	(00)	54.00	34.8
+30	(+50) 170	0.0 160	(00)	40.00	29.5
+50	(+44) 190	0.0 180	(00)	39.60	22.0
+80			0.0	0.0	866.7

figures in ring denote original surface

06

Section 11

Channel on L 534+70-536+50

Stations	L	R	Areas	Cu. Yds
0	$\frac{+4.2}{2.0} \frac{+4.2}{1.0}$	0.0	6.30	33.1
+35	$\frac{+2.7}{20.0} \frac{+5.0}{5.0}$	0.0	70.25	69.0
+55	$\frac{0.0}{27.0} \frac{+3.8}{24.5} \frac{+6.0}{4.5}$	0.0	116.25	174.1
1	$\frac{0.0}{25.0} \frac{+3.6}{24.0} \frac{+4.5}{3.5}$	0.0	92.70	135.8
+40	$\frac{0.0}{27.0} \frac{+3.2}{25.0} \frac{+4.3}{4.0}$	0.0	90.55	55.9
+70	$\frac{0.0}{20.0} \frac{+1.0}{4.0}$	0.0	10.00	0.6
+75	0.0	0.0	0.0	468.5

Class 1/2 L.R. & 1/2 S.R.

Material hauled free into Fill Opposite

Channel on L 537+70-539+20 Tail

537+70 = 0	0.0	0.0	0.0	4.4
+10	$\frac{0.0}{19.0} \frac{+1.4}{17.5} \frac{+1.4}{2.6}$	0.0	23.73	56.5
+50	$\frac{0.0}{20.0} \frac{+3.2}{17.0} \frac{+2.8}{2.0}$	0.0	52.60	69.2
+80	$\frac{0.0}{20.0} \frac{+4.0}{18.0} \frac{+4.0}{2.0}$	0.0	72.00	49.8
1	$\frac{0.0}{18.0} \frac{+4.8}{16.0} \frac{+3.0}{2.0}$	0.0	62.40	37.6
+20	$\frac{0.0}{16.0} \frac{+4.3}{14.0} \frac{+1.0}{1.0}$	0.0	39.55	21.8
+50	0.0	0.0	0.0	239.3

2342
239.3
239.3
2342

Class Solid Rock.

Section 11

19

Ditches

Stations	Size	Total Exc	Cub Yds. LR S.R.	
528+80	Outlet from Culvert 2.5x3x12	R.R.	2.2	
532+30%	Surf. D	2.5x6.4x180	106.7	106.7
535+10	on R.	2.0x5.5x110	44.8	44.8
535+90	Channel on R.	3.5x9.0x14.0	16.3	16.3
535+25	Outlet from Culvert 3.0x7.0x25.0		19.4	9.7 9.7
537+70%				
539+20	Tail Channel on L	See opposite	239.3	239.3
534+75%	" " " " "		468.5	234.2 234.3
536+50				
546+30%	Side Ditch on L			
546+90	3x3x60	20.0		20.0
	Slope D. on L. Hauled into			
554	Fill 3.0x9.0x60	60.0		60.0
		977.2	352.8	624.4

Box Culverts

517+90	1x1 1/2x90	inside	1764	F.B.M.	✓
519+40	1x2 1/2x32	"	840	" "	✓
528+80	1x2 1/2x29	"	760	" "	✓
535+25	2x5 1/2x78 (Double)	"	4692	" "	✓
552+70	2x2 1/2x56	"	1815	" "	✓
559+80	1x1 1/2x86	"	1680	" "	✓
547+75	1 1/2x2x22	"	580	" "	✓
			12136		

Section 11

Clearing

517	to 518	100' wide	10000	Sq. Ft.
519	to 520	80 "	8000	" "
521	- 522	60 "	6000	" "
525	- 530	60 "	30000	" "
530	- 533+50	70 "	24500	" "
533+50	- 536	125 "	31250	" "
536	- 537+50	80 "	12000	" "
537+50	- 540 Tail	50 "	12500	" "
539+50	- 561	75 "	161250	" "
529	Borrow Pile on R	50x130	6500.	" "
540	" " " "	60x200	12000	" "
534+75	to 536+50	Channel 65x185	12025	" "
537+70	to 539+20 Tail	Channel 50x200	10000	" "
Total Acres =			336025	" "

Rip Rap

534	Rip Rap face of Dyke	10x25x33.0 =	3.1 C.Y.
538+50	to 539+70 Tail	40x35x120 =	62.2 " "
536	to 536+35	45x4x35 =	23.3 "
			88.6 "

Ft.

"

"

"

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"

"

C.Y. ✓

" ✓

" ✓

" ✓

✓

Section 11.

PAGE	Acres.	Excavation - Cub Yds.				Cu. Yds. Total in	Cu. Yds. Bar mao
		Tearing	Total Cut Earth	Lo Rock	S. Rock	Banks	
	55		✓1347.4	✓232.7	✓1114.7	✓	✓
	56		✓112.0		✓112.0	✓110.6	✓1
55	56					✓778.0	✓
	57		✓1169.8	✓202.7	✓967.1		✓
	58		✓169.2		✓169.2	✓357.1	✓
	59					✓1815.0	✓1
	60		✓2101.3	✓201.0	✓1900.3		✓2
	61		✓252.0	✓31.2	✓220.8	✓2692.4	✓
55	62		✓44.4		✓44.4	✓431.1	✓
	62		✓266.3	✓266.3			✓
54	63		✓191.3		✓191.3	✓814.5	✓
	64					✓114.9	✓
	64					3253.1	✓2
	66		✓1525.2	✓576.2	✓949.0	✓137.1	✓
	67		✓1.6		✓1.6	✓2323.0	✓10
	69		✓1507.8	✓758.1	✓749.7		✓1
	70		✓1.1		✓1.1	✓1091.5	✓
	70		✓55.7		✓55.7		✓
	71		✓605.4		✓605.4	✓52.4	✓
	72					✓2372.0	✓19
	73		✓1067.9	✓104.8	✓963.1		✓
	74		✓87.5		✓87.5	✓3905.5	✓30
	75		✓56.0		✓56.0		✓
	75		✓144.0	✓144.0			✓
	79		✓977.2	✓352.8	✓624.4		✓
55	80	7.71					
7		✓7.71	✓11683.1	✓2869.8	✓8813.3	✓21248.2	✓16
	5 minutes		7077	2342	4738		
				31040	9286.8		

Summary

81

Cu. Yds. Banks made from Cuts	Borrow - Cu. Yds. Earth. Lo Rock S. Rock	Cu. Yds Haul.	Cu. Yds Pip Rep	Lumber in Culverts F.F.M.
0.6	✓ 11106	✓ 1815		
8.0	✓ 778.0	✓ 1410		
57.1	✓ 357.1	✓ 135		
15.0	✓ 1464.9	✓ 350.1	✓ 356.0	
92.4	✓ 2470.1	✓ 188.0	✓ 535	
31.1	✓ 431.1		✓ 116	
14.5	✓ 1366	✓ 477.9	✓ 112	
14.9	✓ 114.9		✓ 1078	
53.1	✓ 2438.2	✓ 407.4	✓ 192	
37.1	✓ 137.1	✓ 407.5	✓ 1630	
23.0	✓ 1006.0	✓ 548.6	✓ 1683	
91.5	✓ 1091.5	✓ 774.4	✓ 970	
52.4	✓ 52.4		✓ 2580	
72.0	✓ 1958.7	✓ 4133	✓ 1029	
05.5	✓ 3038.8	✓ 866.7	✓ 826	
			✓ 1744	
				✓ 12136
48.2	✓ 16580.0	✓ 748.6	✓ 88.6	
	✓ 1694.0	✓ 2225.6	✓ 88.6	✓ 12136
		✓ 19415		

1920

SECTION II COST

CLEARING 7.71 ACRES @ 35⁰⁰ 269.85

EXCAVATION EARTH

" L. ROCK ⁹¹⁰⁴~~28698~~ CU.YDS. 45 ¹³⁹⁶⁸⁰~~129141~~

" S. ROCK ⁹²⁸⁶⁸~~88133~~ " 90 ⁸³⁵⁸¹²~~793197~~

BORROW EARTH 7486 " 15 11229

" L. ROCK 16940 " 40 677.60

" S. ROCK 22256 " 90 2003.04

HAUL 100 FT. 19415 " .015 291.22

LUMBER FT. BM. 12136 12⁰⁰ 145.63

Rip Rap 886 CU.YDS. 1⁰⁰ 88.60

^{10343.15}
~~12811.61~~

12811.61

62.85

9680

91.41

58.12

931.97

12.29

577.60

003.04

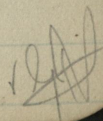
291.22

145.63

88.60

343.15

811.61



S
C
5 Ex

5 B

H
L
R

5

5
5
5
5
54
54
53
53
53

84 85

L C R

[illegible]

A diagram showing a 3D molecular structure with bond angles and distances. The structure consists of several atoms (represented by circles) and bonds (represented by lines). The bond angles are labeled as follows: 150°, 120°, 100°, 150°, 120°, 100°, 150°, 120°, 100°. The bond distances are labeled as follows: 1.50, 1.20, 1.00, 1.50, 1.20, 1.00, 1.50, 1.20, 1.00. The diagram is drawn on a grid of red lines.

A diagram showing a 3D molecular structure with bond angles and distances. The structure consists of several atoms (represented by circles) and bonds (represented by lines). The bond angles are labeled as follows: 150°, 120°, 100°, 150°, 120°, 100°, 150°, 120°, 100°. The bond distances are labeled as follows: 1.50, 1.20, 1.00, 1.50, 1.20, 1.00, 1.50, 1.20, 1.00. The diagram is drawn on a grid of red lines.

A diagram showing a 3D molecular structure with bond angles and distances. The structure consists of several atoms (represented by circles) and bonds (represented by lines). The bond angles are labeled as follows: 150°, 120°, 100°, 150°, 120°, 100°, 150°, 120°, 100°. The bond distances are labeled as follows: 1.50, 1.20, 1.00, 1.50, 1.20, 1.00, 1.50, 1.20, 1.00. The diagram is drawn on a grid of red lines.

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A diagram showing a 3D molecular structure with bond angles and distances. The structure consists of several atoms (represented by circles) and bonds (represented by lines). The bond angles are labeled as follows: 150°, 120°, 100°, 150°, 120°, 100°, 150°, 120°, 100°. The bond distances are labeled as follows: 1.50, 1.20, 1.00, 1.50, 1.20, 1.00, 1.50, 1.20, 1.00. The diagram is drawn on a grid of red lines.

Reference Points

L C R

533+87 PT

531+04^E PC 8° L

529+94^E PT

524+67 PC 4° R

520+06^L PT

520+28^R PT

519+35 PC 15° R

514+98^R PT

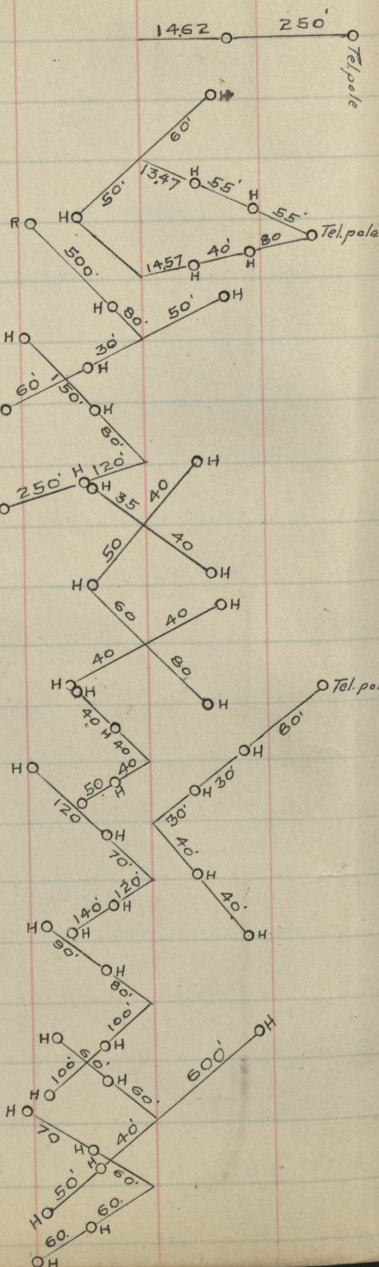
511+37^R PC 8° L

503+66 PC 6° L

502+49^R PT

497+20 PS 8x9 R

491+97^E PT



4900

489+

486+

481+80

481+81

479+

472

437

423

420

418+

414

412

411

85

RO 100' R 27.0

HO — 60' — H — 40' —

$$\text{RO} \begin{array}{c} // \\ \backslash \end{array} \begin{array}{c} 250 \\ \text{---} \end{array} \begin{array}{c} \text{H} \\ | \\ \text{O} \end{array} \begin{array}{c} 250 \\ \text{---} \end{array} \begin{array}{c} \text{OH} \\ | \\ \text{O} \end{array}$$

481+88⁵ Back = PS8x9L
481+81 Ford

HO 40 OH 50
RO 50 OH 40
40

HO 200' HO 60-600'

250'

The diagram shows a three-phase power system with three buses: H, R, and H. The fault is located at bus R. The fault current is 25.0. The fault voltage is 80.0. The fault impedance is 70.0. The fault resistance is 20.0. The fault reactance is 18.0. The fault is a bolted fault.

A diagram showing two intersecting lines. The top line is horizontal and labeled 'O.H' at both ends. The bottom line is slanted and labeled 'H.O' at both ends. At the intersection, four angles are marked: two top angles of 40° each, and two bottom angles of 60° each. The angles are labeled as follows: top-left 40°, top-right 40°, bottom-left 60°, and bottom-right 60°.

411765 PG. 15°L

Bench Marks

			Elev.
On Stump	30' L	419	4562.67
" Hub.	35' L	440+80	4492.76
" "	40' R	464+25	4431.96
" "	60' L	475+75	4402.85
" "	75' L	490+25	4341.69
" "	70' R	495+60	4224.03
" "	80' R	523	4241.22
" "	20' R	538 Tail	4223.07
" "	50' R	543+30	4189.41
" "	35' L	548+79	4174.35
" "	48' R	555+50	4152.32

2. ~~AAA~~ 8/23/04

